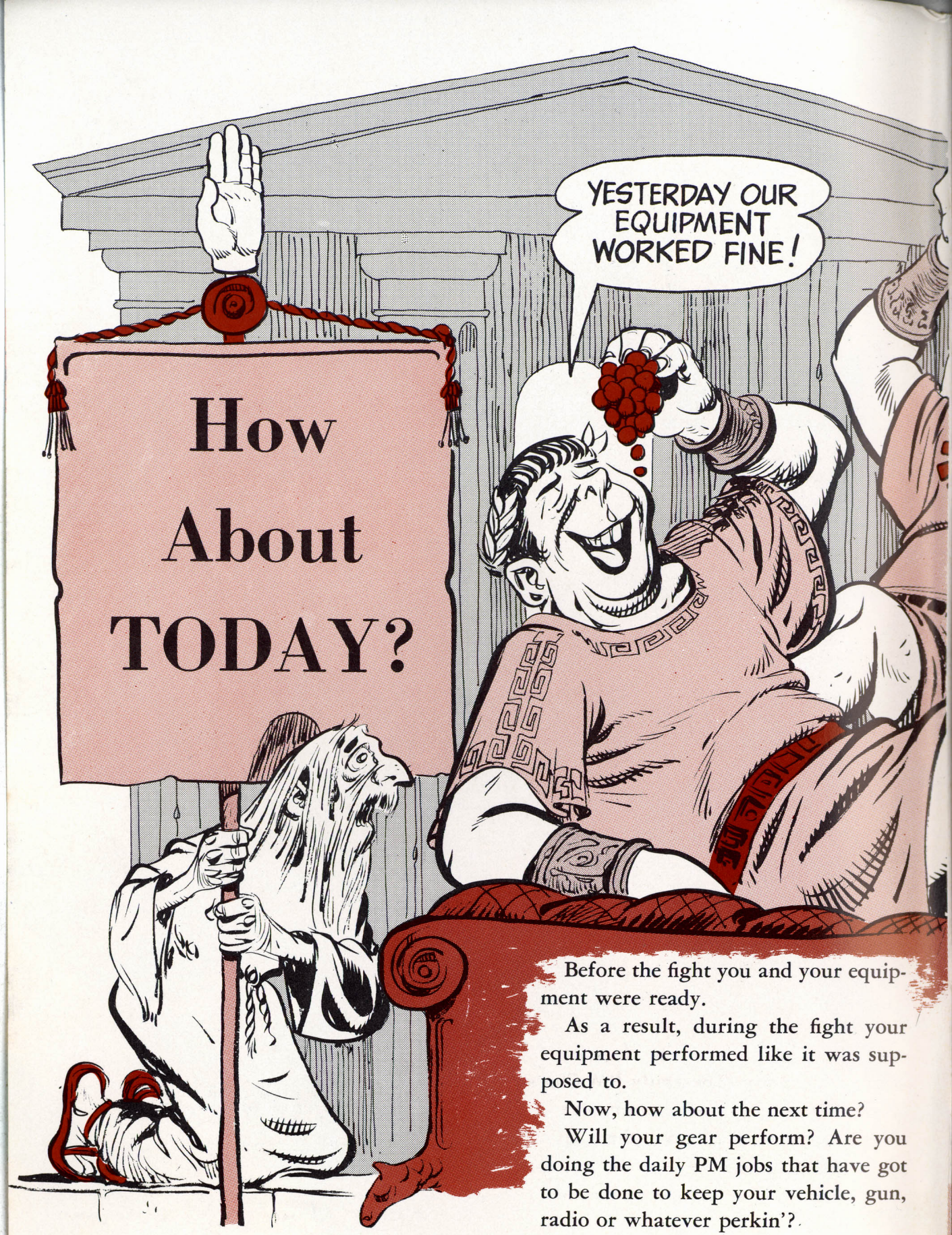
Issue 166
PS
1966 Series
THE PREVENTIVE MAINTENANCE MONTHLY
WE CAN'T FIRE, SIR!!
WHY? 'CAUSE A LOUSY NUT WORKED LOOSE ON THE GUN'S TRAVERSING MECHANISM!!
PM???... NO, SIR, WE'VE BEEN TOO BUSY, SIR!
Will Eisner
SPECIAL FEATURE
M107 GUN, M110 HOWITZER
PAGES 37-53



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As a result, during the fight your equipment performed like it was supposed to.

Now, how about the next time?

Will your gear perform? Are you doing the daily PM jobs that have got to be done to keep your vehicle, gun, radio or whatever perkin'?

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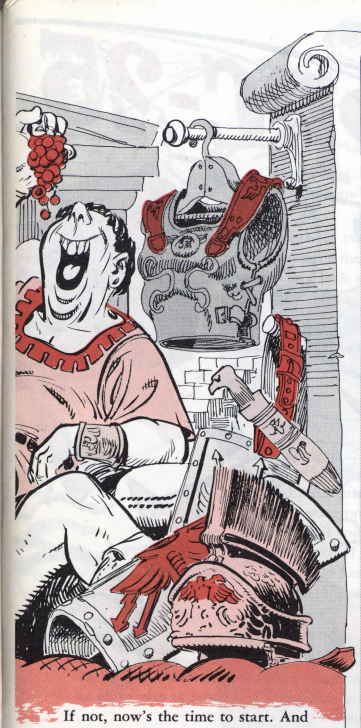

If not, now's the time to start. And keep it up.

Maintenance can't be forgotten—even for a day. The Daily PM Checks and Services in your equipment's TM will be your guide. Look them up and get with the job.

Be ready for the next operation . . . with PM.

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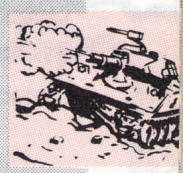

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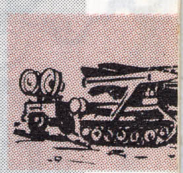

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COMMUNICATIONS
PRC-25
BREATHE EASY, RADIO REPAIRMAN... BEHOLD THIS LOVELY SPECIMEN.

Finding a Joe who's mad enough at an AN/PRC-25 series radio set to badmouth it is about as easy to do as sitting on a bamboo spear tip.

Like, when the geniuses back at the drawing boards dreamed up those little gems, they must've had operators and repairmen kibitzing over their shoulders.

For the operator, the sets are almost as uncomplicated as using a pocket portable.

So a few cautions, some PM palaver and an inside word or two on a coupla' short-term shortcomings should keep you communicating.

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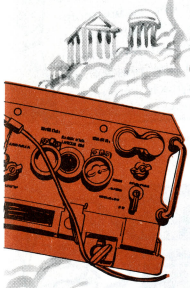
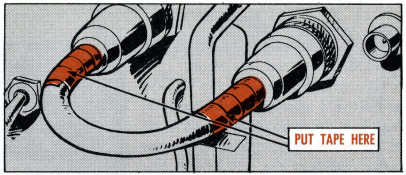
NEWS AND VIEWS



Onward — to the main components of the PRC-25, the AN/VRC-53 and the AN/GRC-125.

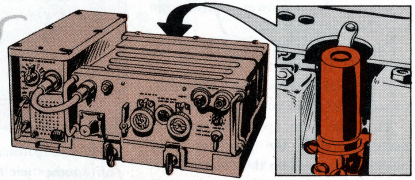
RT-505

A batch or two of the CX-4655/U special purpose cables that tie the RT-505 to the amplifier-power supply were cut a little short when they were made.



And, when you connect the components, that sharp U-bend pulls just enough cable to make the connectors less than waterproof.

So-o-o-o, if you can spot wiring when the cable's bent, a loop or two of insulating tape at the base of the connector should keep out moisture. It should serve in an emergency, till you can get a new cable.



The V1 (2DF4) tube, FSN 5960-892-3689, and transmission range depend pretty much on each other, so if you lose range, the tube is a good suspect. Fact is, you might test the tube periodically just so's you'll be sure you have range when you need it.

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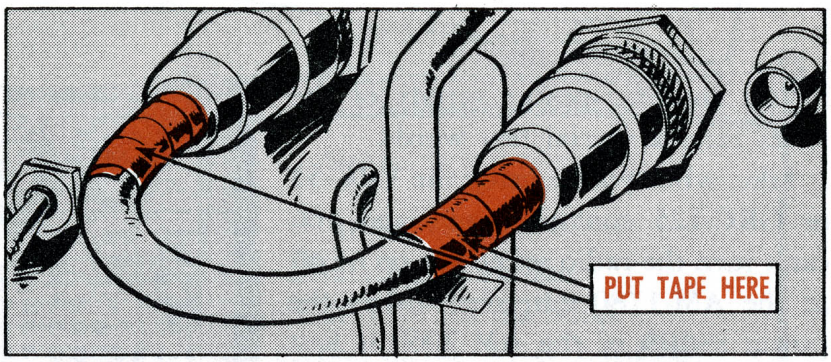

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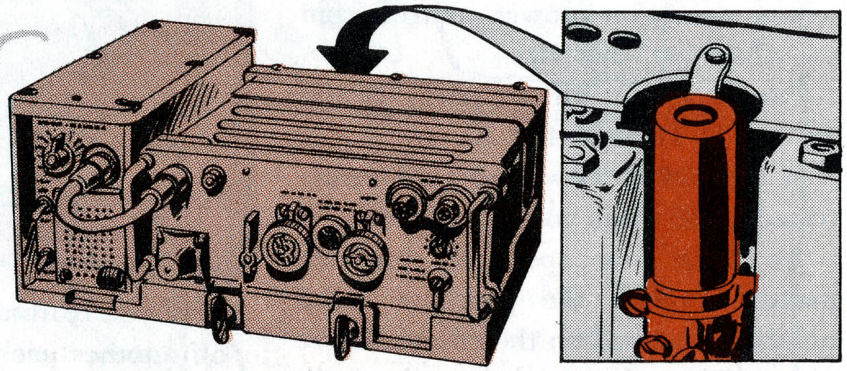

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PS MORE

Main components or otherwise, voltage surge from the vehicle electrical system even gets to this set. There are built-in deterrents, like diodes and resistors, but there's still no sub that beats turning off the set prior to starting and stopping vehicle engines.

Another safeguard: If you're using only one audio receptacle of the RT, keep the unused one covered. Moisture on just two of the pins of the unused receptacle can put it out of business.

AM-2060

The amplifier-power supply of the series rates a special few words.

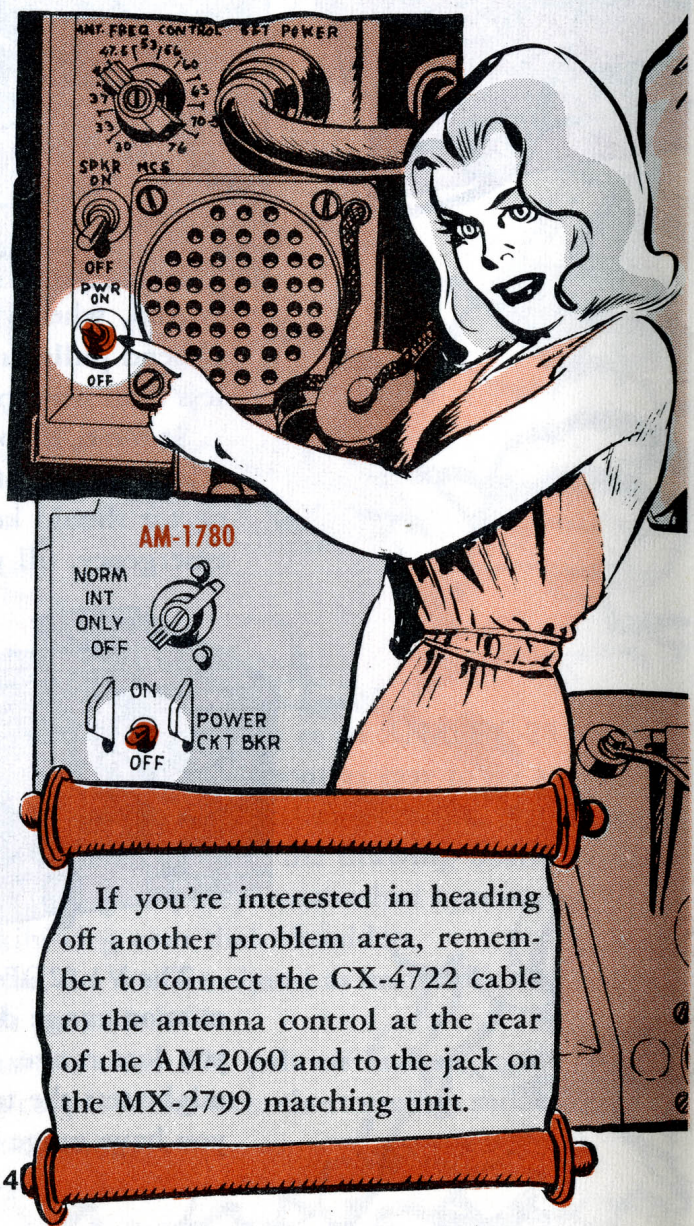
Like, when you're using the VRC-53 or GRC-125 configurations, and you can't turn the radio set power on or off at the AM-1780 amplifier unless the power switch of the AM-2060 is first set to OFF. In which case, watch it!

Get your direct support to update your AM-2060 pronto! The connector wiring in the rear of the amplifier has to be changed. Naturally, before you suspect the amplifier, make sure the link in your MT-1029 mount is set for remote operation (power control from the AM-1780, that is).

For the mount bit, see paras 4a and 4b of TM 11-5820-498-20.

If the AM-2060 wiring goes uncorrected, it can drain your vehicle battery.

To help you spot the problem makers, eyeball the purchase order numbers stamped on the nomenclature plates. Those involved are all amplifiers purchased on order number 15108-PP-62; about 2000 of the first batch of order number 5175-PP-64 and a few oddballs in other purchases.



If you're interested in heading off another problem area, remember to connect the CX-4722 cable to the antenna control at the rear of the AM-2060 and to the jack on the MX-2799 matching unit.

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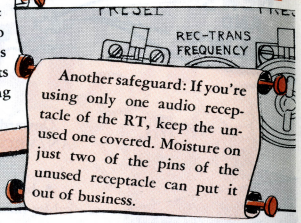

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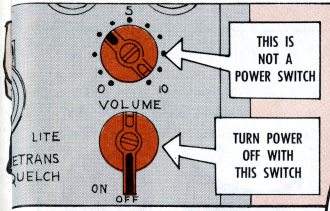

Next time you spot some Joe trying to turn the set off or on with the volume control switch of the RT-505, tell him he's stackin' hay in a windstorm. Like you know, power to the set is controlled by the ON-OFF function switch, directly below the volume control.

Forcing the volume control knob against its stop can strip the knob . . . and you'll lose the set to the repair shop.

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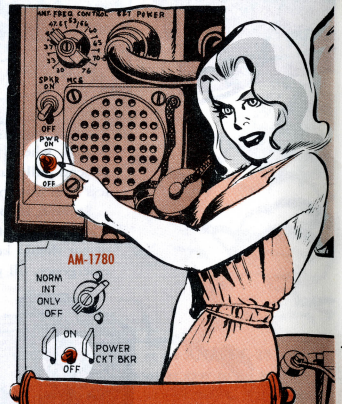

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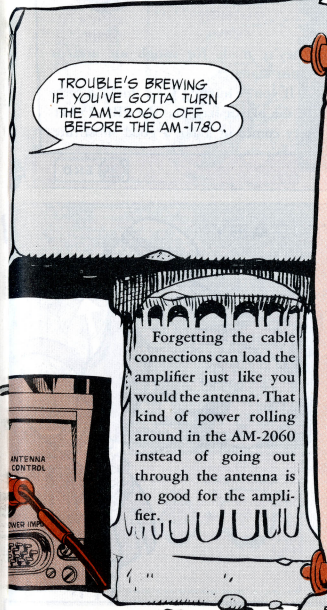
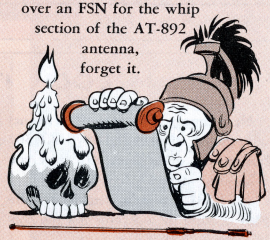


Forgetting the cable connections can load the amplifier just like you would the antenna. That kind of power rolling around in the AM-2060 instead of going out through the antenna is no good for the amplifier.

MISCELLANEOUS

If you've been blearying an eyeball over an FSN for the whip section of the AT-892 antenna, forget it.

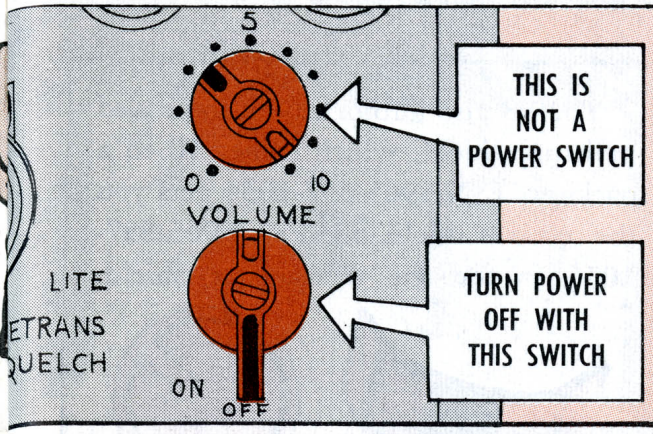


The whip and flexible base are issued together, as one FSN . . . 5820-889-3803.

Here're a few other FSN's you might've been looking for:

That previously hard-to-come-by O-ring for the U-182 connector of your

MORE



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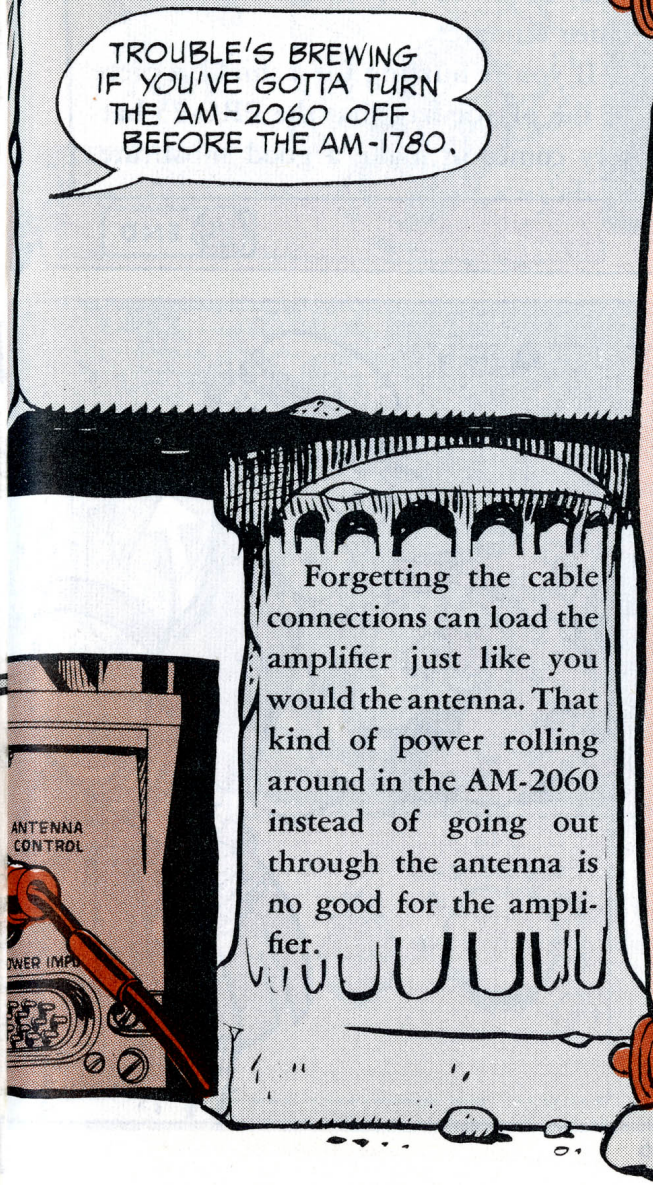

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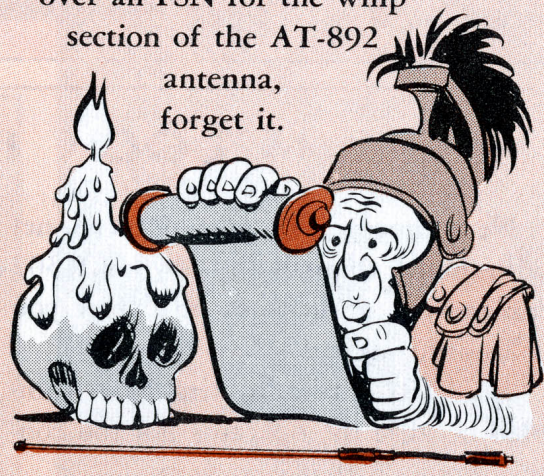

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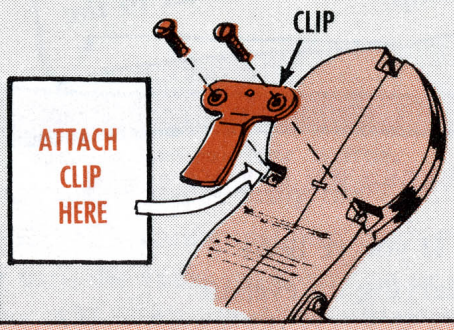
PS MORE

H-138 handset (also for the new U-229 connector) now goes by FSN 5330-905-6032. It'll be included in a revision of TM 11-5965-257-20P.

Also scheduled for that revised parts manual is FSN 5340-999-2820, which gets you a belt clip and mounting instructions for the H-138. Meanwhile, SB 11-603 (4 Apr 66) is your authority.



The SB also authorizes an improved moisture shield, which comes 10 to a package. FSN 5965-857-1034 gets you the receiver shield, and FSN 5965-857-1036 is for the transmitter shield.

They're made for rough use and/or moist climates.

If you're hurting for a shield, a piece of the plastic bag that the PRC-25 battery comes in make a good substitute.

END

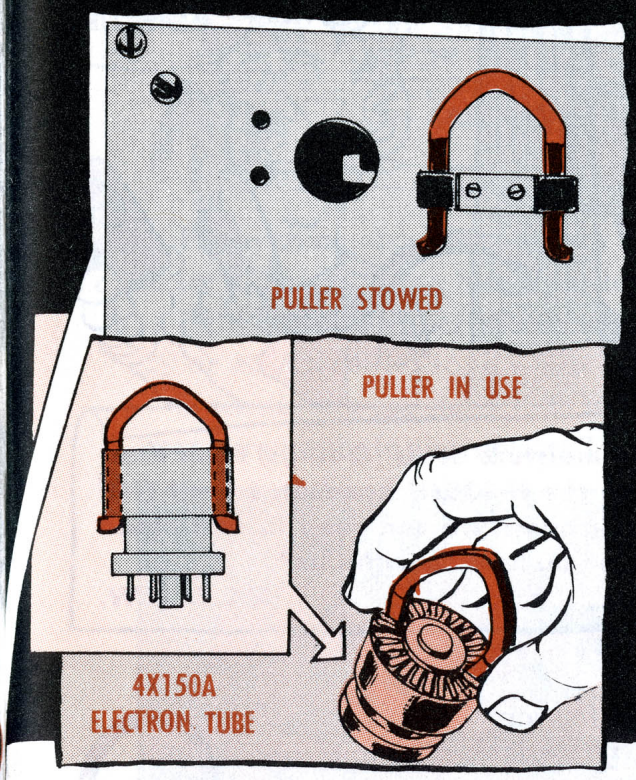
LOCK IT EASY

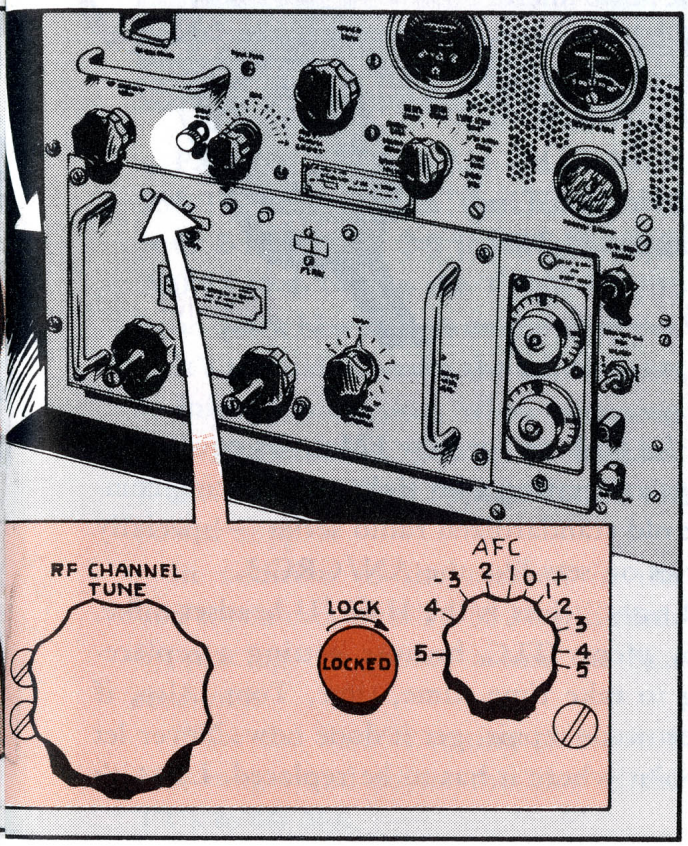
Next time you've got your channel with the RF channel dial of your T-302 transmitter, think a second before you follow through.

AN/TRC-24 radio sets have tumbled because the operator got too conscientious on that next step.

Like, your next move is to lock the channel dial. Fine. Commendable. But you don't have to turn the lock clear off the panel of the T-302. Snug it down enough so that it holds the RF channel dial firm.

Don't put so much torque to it that you have to turn the transmitter in to have its channel lock innards fabricated. It could be a long wait.





TOOTH? — NO, TUBE

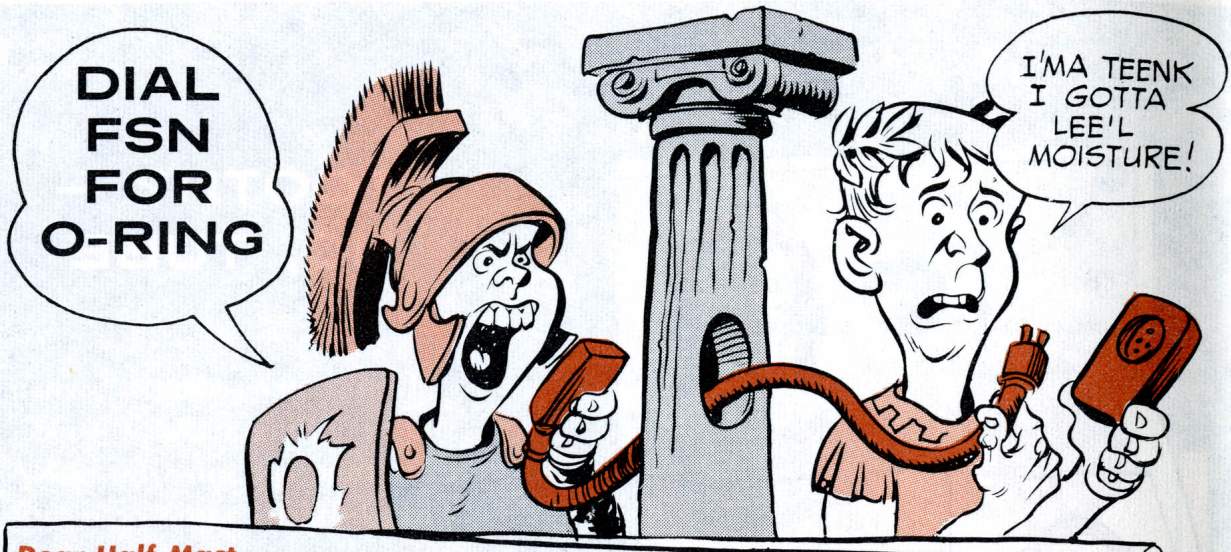
Don't play dentist when you're pulling a 4X150A electron tube out of your AN/TRC-24 series radio or terminal set for testing . . . keep those needlenose pliers out of the tube's heat vanes.

Your best bet's to use tube puller (FSN 5120-293-2699), because those pliers'll pinch the vanes together. Then, the first time power's put to the tube, it can overheat and be damaged.

Take, f'rinstance, the 4X-150A in the driver assembly in the lower chassis of the T-302()/TRC transmitter.

Remove the driver compartment cover, push the puller or extractor through the heat vanes of the tube and gently pull out.

Just make sure you're using the tube puller that's clipped to the side of the AM-915()/TRC, AM-1178/GRC or AM-1180/GRC radio frequency amplifier-multiplier. It's made for the job.



Dear Half-Mast,

My outfit's having a rash of lost rubber moisture seals (O-rings) from their U-182/U and U-229/U cable connectors on the H-138/U handset. I can't find a replacement for this O-ring and without it moisture can seep in and cause intermittent communications problems. Can you help us with this?

SFC F. J. W.

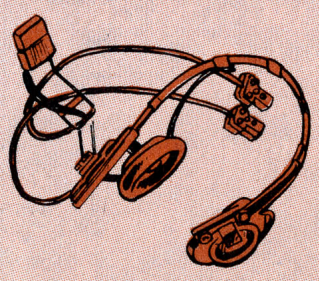
Dear Sergeant F. J. W.,

No sweat. FSN 5330-905-6032 will get it for you. In fact, the O-ring fits all U-182/U and U-229/U connectors, like, f'rinstance, those on the M-80 microphone and H-161,MK-525/G and MK-526/G headset-microphone. The stock number is getting added to parts manuals or to the functional parts lists of the basic TM's.

To keep the O-ring in place . . . and to lengthen its life . . . give it a light coat of silicone compound, FSN 5970-224-5277.

Half-Mast

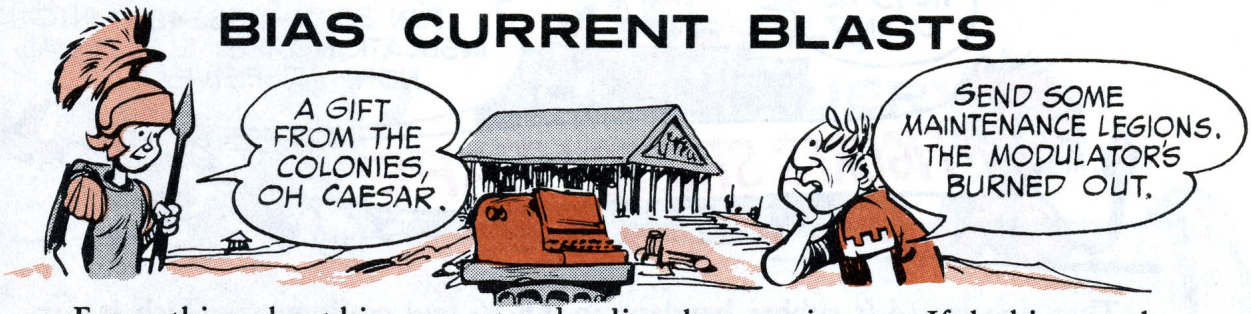
FOR A HEALTHY HEADSET



What with the push on for new FM-series equipment and such, things are getting a bit tight on replacing components of the old standardized radio series — 'specially audio accessories on sets like the AN/GRC-3.

In the "real tight" class is the H-63/U headset-mike. Give that baby plenty TLC, because getting a replacement is going to take time, time, time, Tom. Also, if that little joker needs repair, get it done now. Never let it get to the point where it has to be replaced. Like, it's tight.

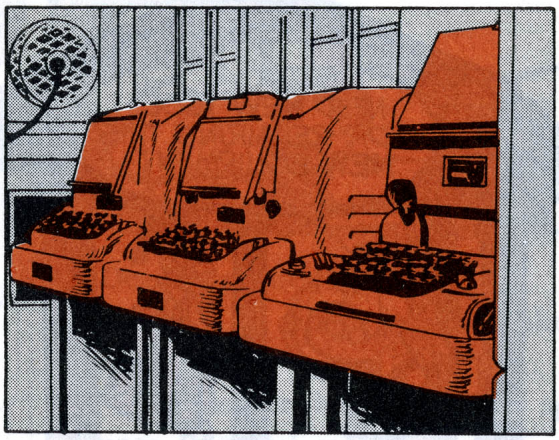
BIAS CURRENT BLASTS



Funny thing about bias current and radio-teletypewriter sets. If the bias supply is set too high, it can burn out the modulator of your set.

F'rinstance, whether you're working with an AN/GRC-26D, an AN/VRC-29 or an AN/GRC-46, the bias current should measure 60 milliamperes.

Since all sets use the TT-98 and the TT-76 teletypewriters, a coupla' pertinent paragraphs in appropriate TM's should straighten you right out — especially if radio repair is your specialty and teletype work isn't.

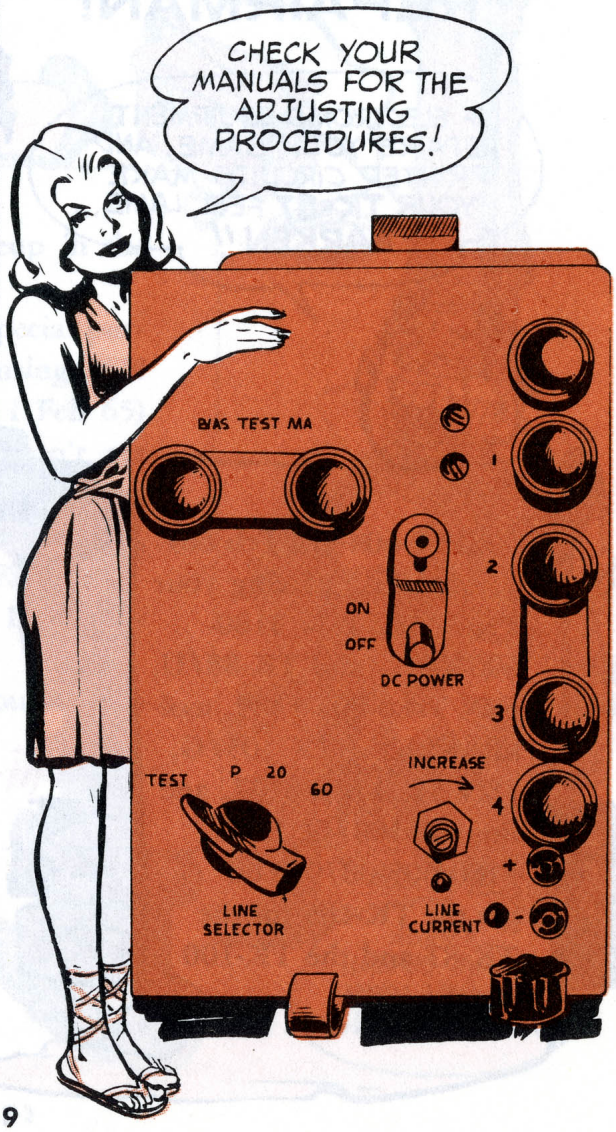


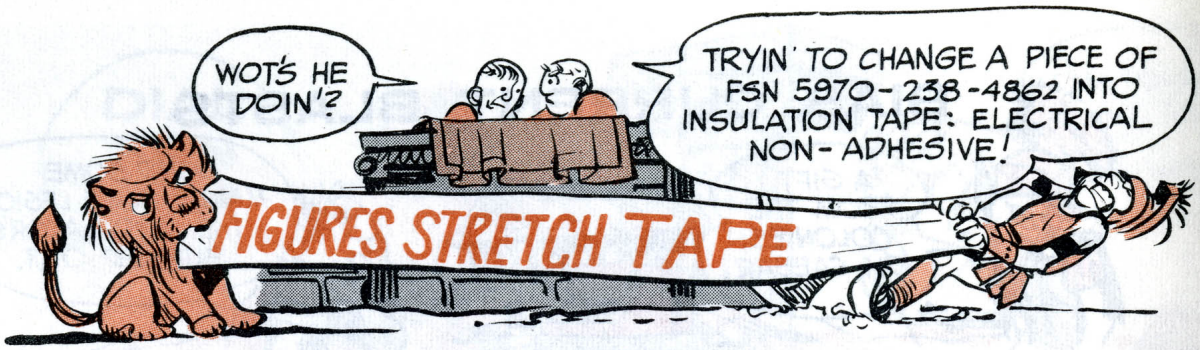
Para 2-8c and fig 2-7 in TM 11-5815-238-12 (Dec 65) on the TT-76 and para 2-13 and fig 2-9 in TM 11-5815-200-12 (Feb 66) on the TT-98 fill you in on quick bias adjusts on the teletypes.

It's a **must** to make the adjustments at initial installation, when changing from commercial power to another source, or after any adjustment of the power supply.

In addition to the method in the TM's, you can use a TS-352 multimeter by placing the probes across the bias terminals.

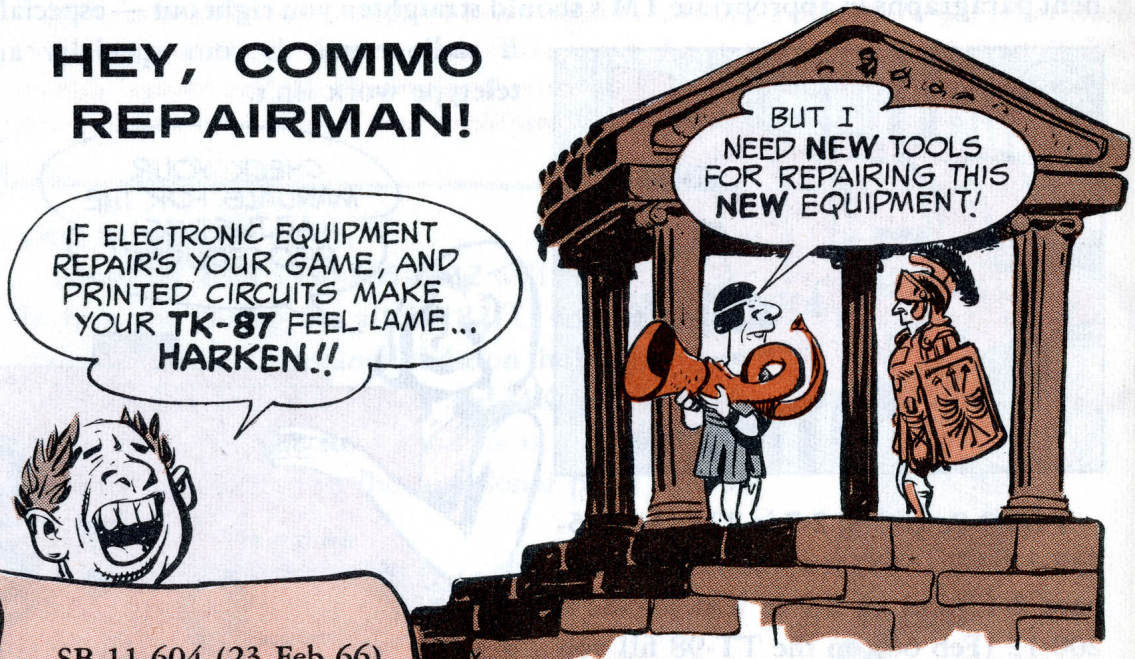
Place the TS-352 setting in the 100 MA range, and adjust the bias of the TT's to 60 MA.





That 4-in by 14-ft rubber bandage in TE-16 tool equipment, which is part of TE-56 tool set for cable splicing, still goes by FSN 5970-238-4862. Until an updated SC 5975-91-CL-CO1 (Feb 65) comes out changing the description from the "¾ in by 50 yards" that's listed there, you can get the bandage by asking for INSULATION TAPE: electrical, non-adhesive, in C5970-IL-A (Aug 65).

HEY, COMMO REPAIRMAN!



SB 11-604 (23 Feb 66) authorized replacing your TK-87/U, FSN 5180-690-4452, and TK-88/U, FSN 5180-893-1389, tool kits with the TK-105/G, FSN 5180-610-8177, and the TK-100/G, FSN 5180-605-0079. You get the TK-105 for the TK-87 and the TK-100 for the -88.

Naturally, the replacements have tools for repairing printed circuits. The replacements are only for repairmen responsible for printed circuitry. Mechanics who have the TK-87 and TK-88 solely for non-printed circuit equipment are not authorized to replace the tool kits. The replacements are stock fund items from GSA. When you get the new sets, you turn in your TK-87's and -88's to support.

PIPSY-4 CABLE QUERY

Dear Half-Mast,

Hey! What gives?

When I get a CX-4935/U telescope light cable for my AN/PPS-4( ) radar set, the bracket and light are missing. How can I get the complete assembly?

SSgt J. P. M.

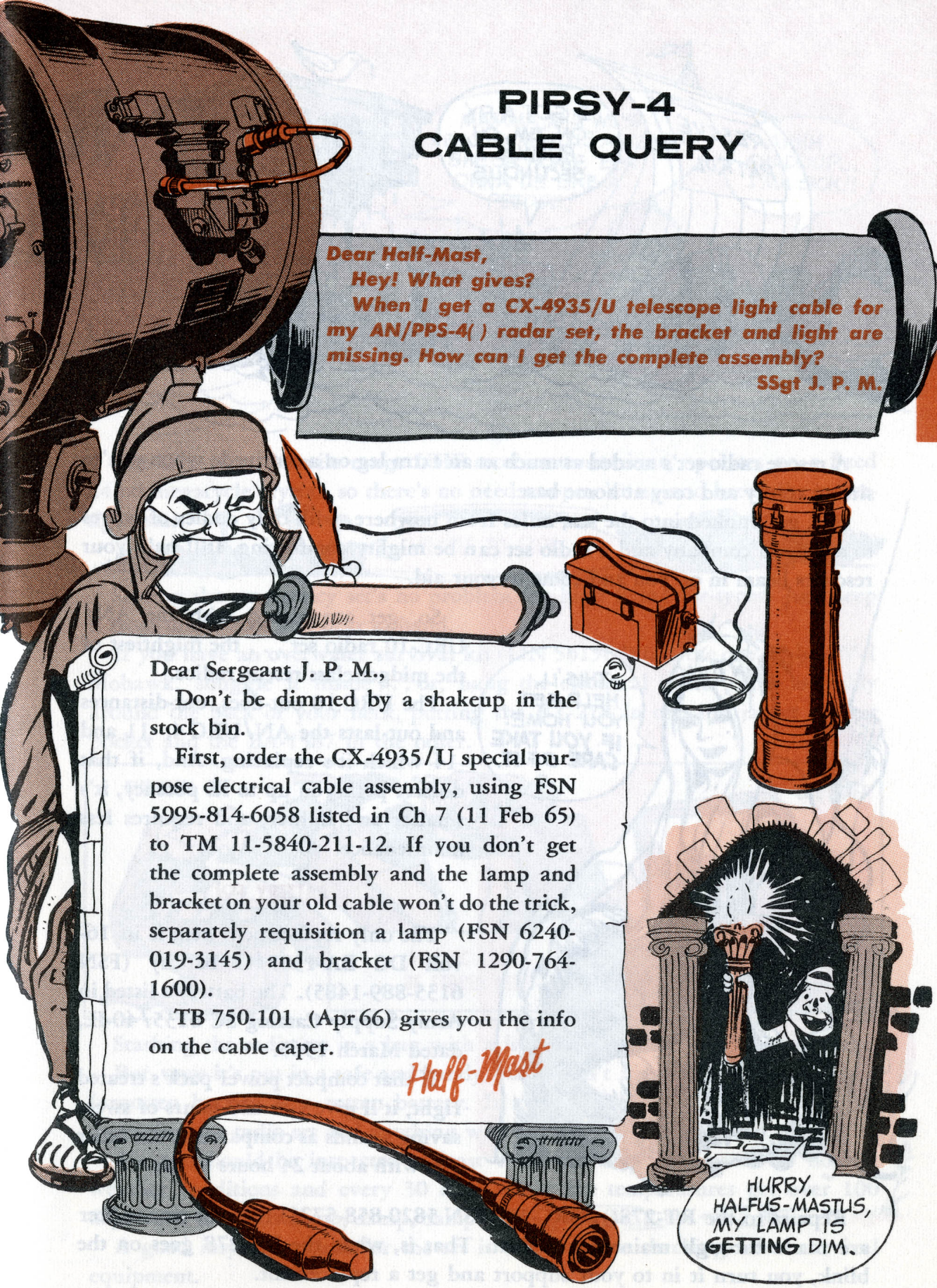
Dear Sergeant J. P. M.,

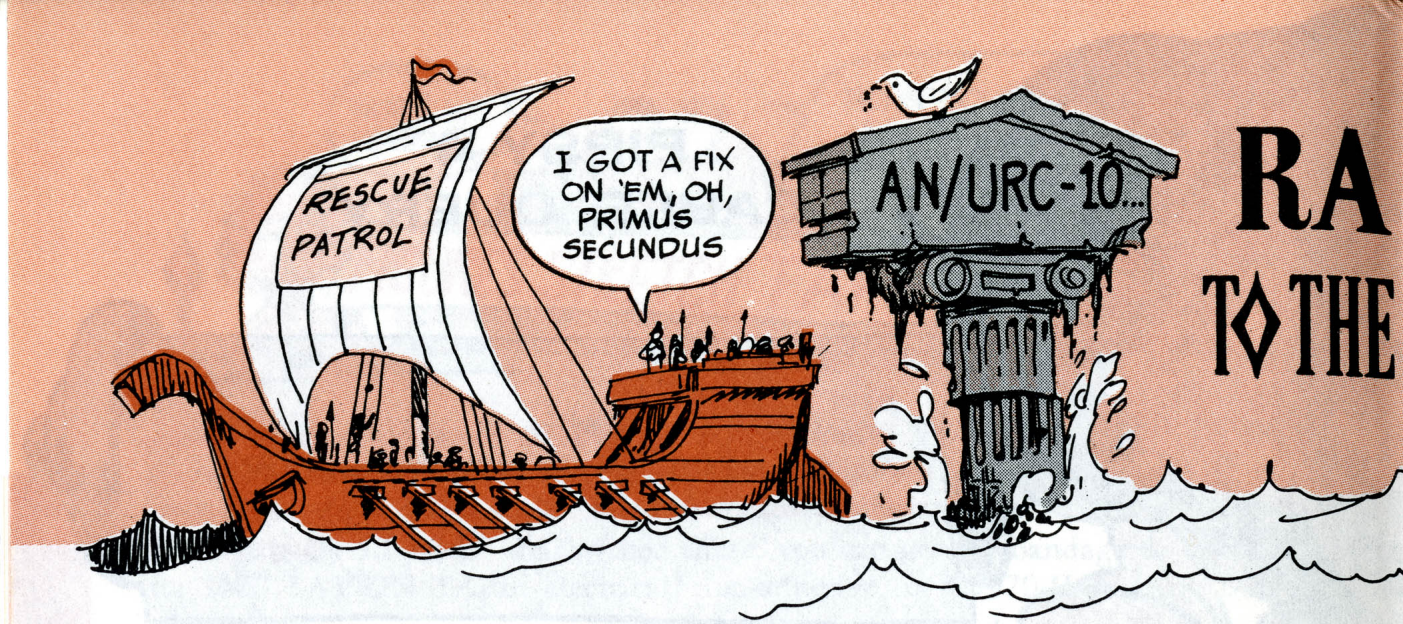
Don't be dimmed by a shakeup in the stock bin.

First, order the CX-4935/U special purpose electrical cable assembly, using FSN 5995-814-6058 listed in Ch 7 (11 Feb 65) to TM 11-5840-211-12. If you don't get the complete assembly and the lamp and bracket on your old cable won't do the trick, separately requisition a lamp (FSN 6240-019-3145) and bracket (FSN 1290-764-1600).

TB 750-101 (Apr 66) gives you the info on the cable caper.

Half-Mast





RA TO THE

A rescue radio set's needed as much as an extra leg on a centipede when you're sitting comfy and cozy at home base.

But, get dunked into the sea, miles from nowhere, with only oodles of waves to keep you company and a radio set can be mighty comforting. It'll help your rescuers beam in on you and come to your aid.

So, get acquainted with the AN/URC-10 radio set . . . the mightiest of the midget class rescue radios.

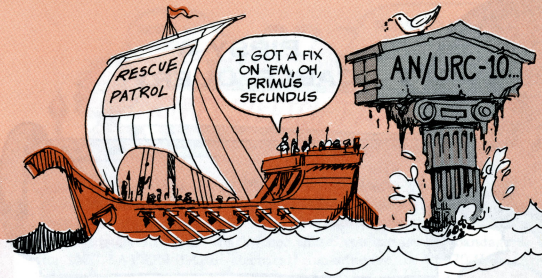
The URC-10 out-does, out-distances and out-lasts the AN/URC-4, -11 and -14 which it's replacing. And, if that doesn't perk you up to its potency, it's smaller and lighter, and requires less maintenance.

BATTERY FSN

The only replacement item is its 16-volt DC BA-1387/U battery (FSN 6135-889-1485). The battery's listed in Army Supply Catalog SC 6135/40-IL, dated March 1965.

If that compact power pack's treated right, it'll give you 120 hours of sweet saving sounds as compared to the other sets with about 24 hours of life.

Repairs to the RT-278()/URC-10 (FSN 5820-858-5721) receiver-transmitter are made through maintenance float. That is, when the RT-278 goes on the blink, you turn it in to your support and get a replacement.



RADIO TO THE RESCUE

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The Urk-10, a 30-mile range UHF receiver-transmitter, operates on a fixed 243.0 megacycle crystal, so there's no need to open 'er up and break the water-tight seal.

PLACES TO STORE

Storing the emergency set's no problem for high flying air-types. Just keep it from under foot and near at hand.

If you have an overwater survival kit (LIN 561568) like the one in the OV-1 Mohawk, snuggle it inside . . . or, hang the electrical power cable assembly around the back of your neck, putting the RT-278 in one life jacket or vest pocket and the BA-1387 in the other.

Stashing the radio set in a bag with a life raft's another good storing place.

But, once it's put in a safe and handy place, don't forget it's there. 'Cause a forgotten battery is a rotten battery. In time it'll corrode, break and spew, damaging the radio set and anything with which it might be stored.

The set should be inspected at least every 90 days under cold or normal weather conditions and every 30 days where the temperatures get over 100 degrees or the air is damp, damp, damp.

A good inspection time for the set is when you're checking other survival equipment.

MORE

DIO RESCVE

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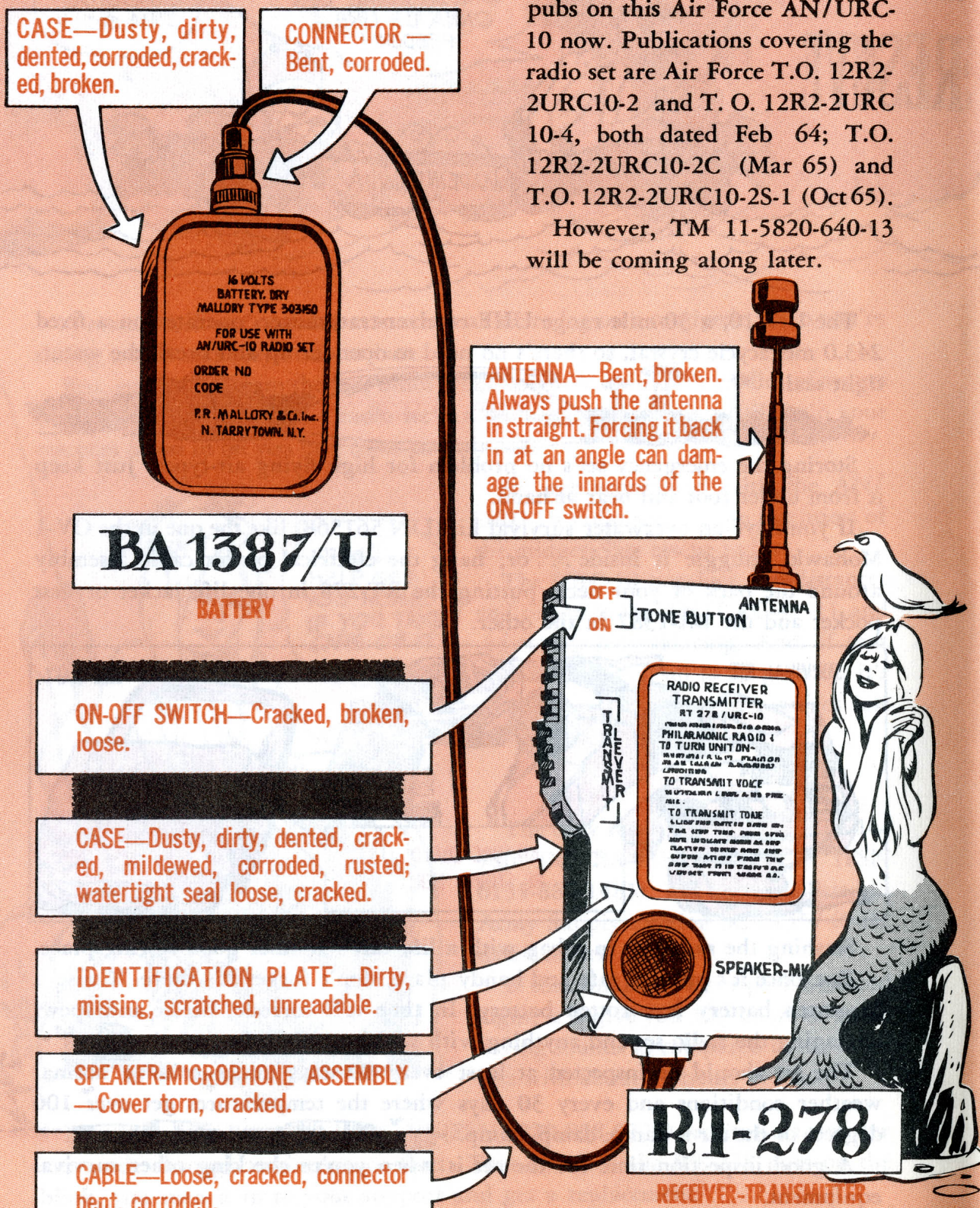
P.S. MORE

Speaking of inspections, here's a few pointers you can watch to help spot abuse and creeping old age:

There aren't any Army technical pubs on this Air Force AN/URC-10 now. Publications covering the radio set are Air Force T.O. 12R2-2URC10-2 and T. O. 12R2-2URC 10-4, both dated Feb 64; T.O. 12R2-2URC10-2C (Mar 65) and T.O. 12R2-2URC10-2S-1 (Oct 65).

However, TM 11-5820-640-13 will be coming along later.



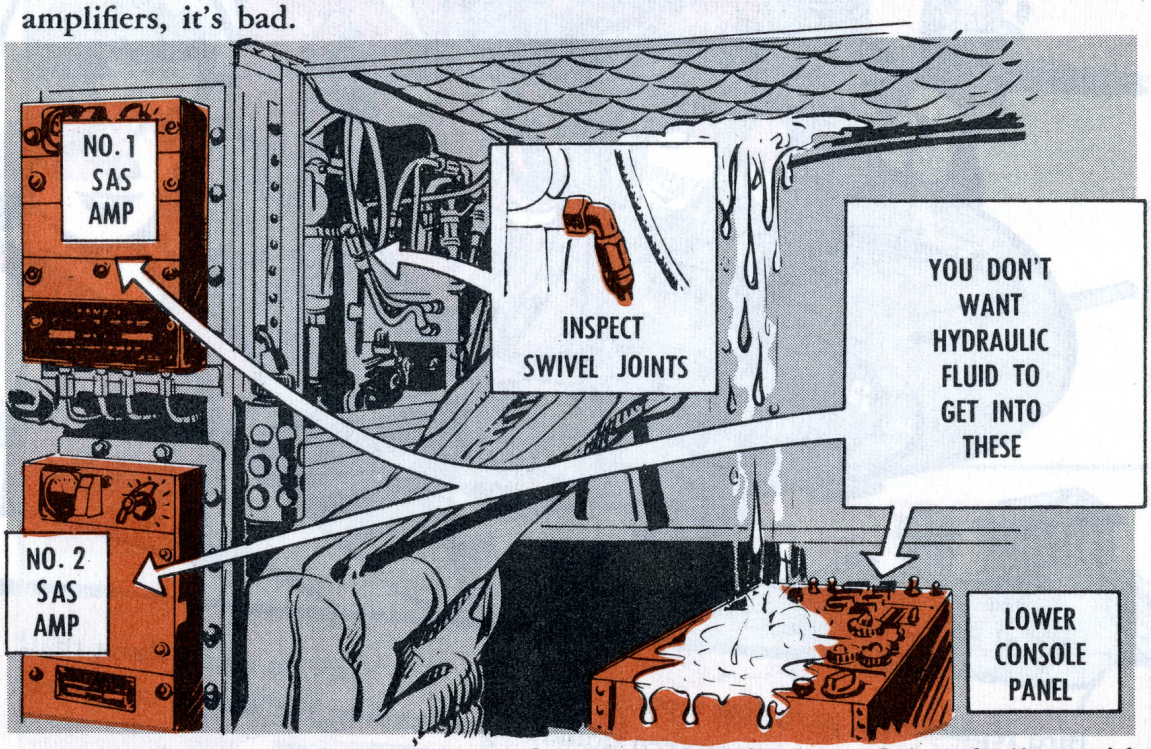
GOTTA LEAKY SAS?

A leaky or drippy spigot can be mighty irritatin' . . . but it won't get next to you half as much as a leaky hydraulic line in the SAS (Stability Augmentation System) of your Chinook (CH-47).

If the side or overhead padded lining is spotted by fluid, you know there's trouble dripping.

Inspect the cable's swivel joints and keep an eye peeled for SAS line leaks.

When that oozin' fluid gets into the variable resistors of the SAS facility's amplifiers, it's bad.



It can knock out both SAS's and replace that feathery flying feeling with more movement on the controls and a rougher ride.

But, even worse . . . that hydraulic fluid leaks from the overhead cable's swivel joint and gets inside the overhead circuit breaker panels or into the lower console's control panel.

In there the fluid can eat the insulation off wiring and cause communications failure.

Bird replacement parts cost a pretty penny . . . you can't do much about that! But you can save Uncle umpteen dollars by extending the life of equipment —maintaining and operating it by the book.

Take those transparent plastic windshields on Chinooks (CH-47). A new set of windshields costs as much as Detroit's latest model!

Those bug catchers and eye protectors take a fiercesome beating from sand, mud and gravel. They need Tender Loving Care—the type spelled out in TM 55-1520-209-20 (18 Apr 66) and TM 55-405-3 (10 May 62).

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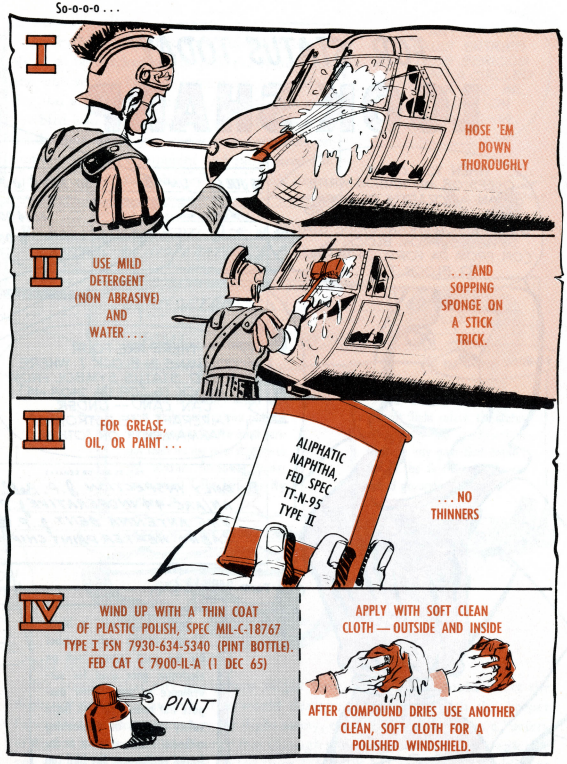
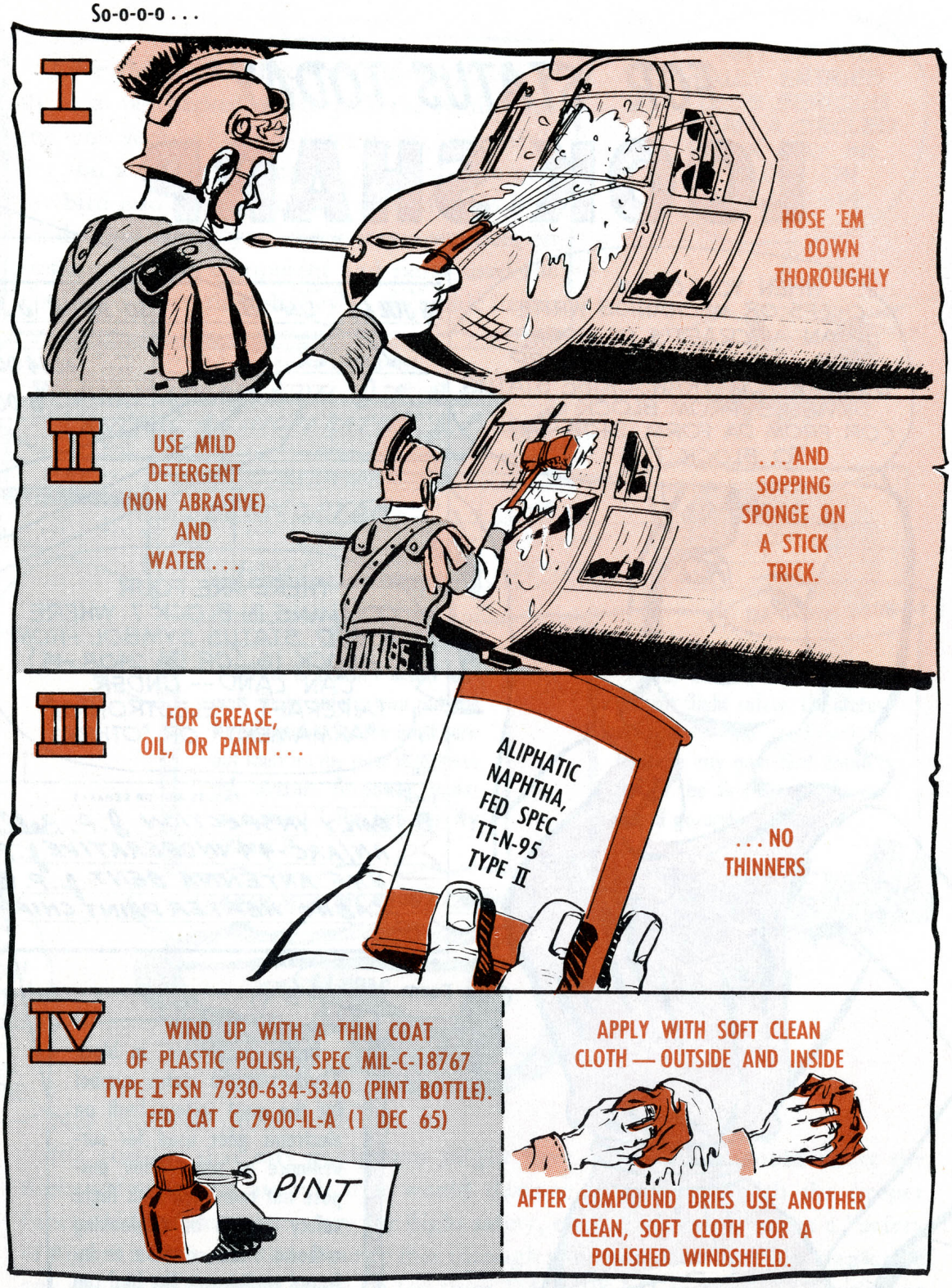


TLC really pays dividends when you use the windshield wipers for the job they were designed to do. To guard against scratching the plastic (or glass for that matter) never run the wipers on a dry windshield. Even a windshield covered with morning dew doesn't call for wiper action . . . use your defrosters or clean 'er by hand.

So-o-o-o . . .



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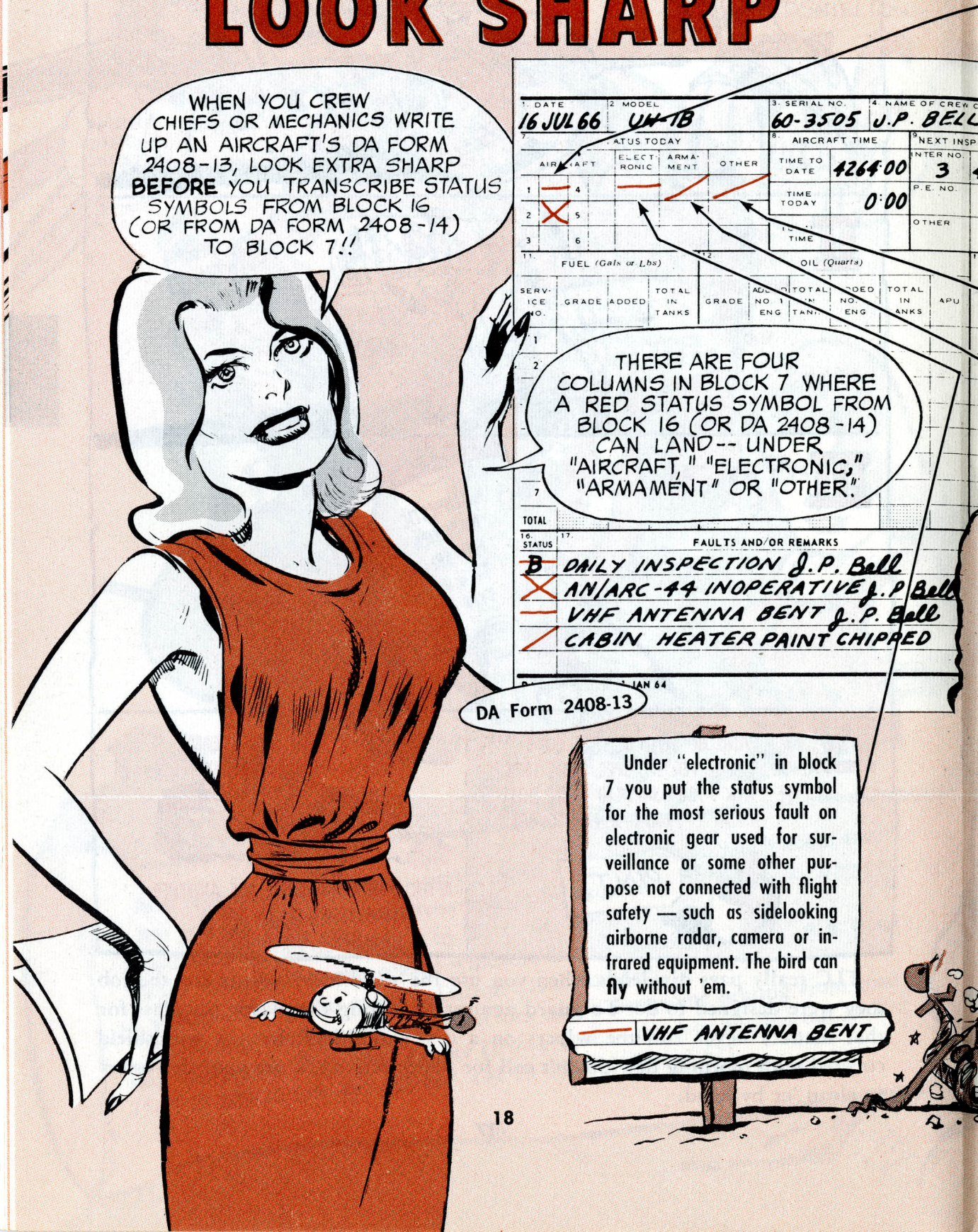
FOR 'STATUS TODAY'

LOOK SHARP



FOR 'STATUS TODAY'

LOOK SHARP

WHEN YOU CREW CHIEFS OR MECHANICS WRITE UP AN AIRCRAFT'S DA FORM 2408-13, LOOK EXTRA SHARP **BEFORE** YOU TRANSCRIBE STATUS SYMBOLS FROM BLOCK 16 (OR FROM DA FORM 2408-14) TO BLOCK 7!!

DATE	2. MODEL	3. SERIAL NO.	4. NAME OF MECH
16 JUL 66	UH-1B	60-3505	J.P. BELL

STATUS TODAY				AIRCRAFT TIME		NEXT INSPECTION DUE
AIRCRAFT	ELECTRONIC	ARMAMENT	OTHER	TIME TO DATE	4266.00	INTER NO. 3 4269.0
				TIME TODAY	0:00	P.E. NO.
				TIME		OTHER

FUEL (Gals. or Lbs.) — SERV. ICE NO. | GRADE | ADDED | TOTAL IN TANKS

OIL (Quarts) — GRADE | NO. 1 ENG | NO. 2 ENG | TOTAL IN TANKS

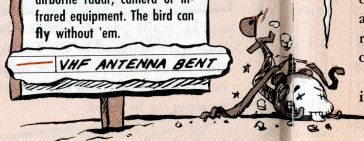
OXYGEN — APU

16. STATUS	17. FAULTS AND/OR REMARKS
B	DAILY INSPECTION J.P. Bell
X	AN/ARC-44 INOPERATIVE J.P. Bell
/	VHF ANTENNA BENT J.P. Bell
/	CABIN HEATER PAINT CHIPPED

DA Form 2408-13

THERE ARE FOUR COLUMNS IN BLOCK 7 WHERE A RED STATUS SYMBOL FROM BLOCK 16 (OR DA 2408-14) CAN LAND -- UNDER "AIRCRAFT," "ELECTRONIC," "ARMAMENT" OR "OTHER."

Under "electronic" in block 7 you put the status symbol for the most serious fault on electronic gear used for surveillance or some other purpose not connected with flight safety — such as sidelooking airborne radar, camera or infrared equipment. The bird can **fly** without 'em.



Everything that affects that bird's ability to fly must be checked out to pick the symbol for the most serious fault to enter under "aircraft." So, you always check on all the gear that gets the bird into the air, keeps it up and helps it to land. That means you check status symbols on communications equipment and radar used for landing — even though they're electronic items.

16. STATUS	17. FAULTS AND/OR REMARKS
B	DAILY INSPECTION J.P. Bell
X	AN/ARC-44 INOPERATIVE J.P. Bell

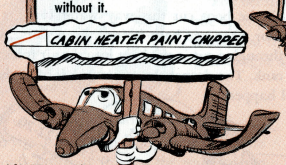
ANY OF THE FAULT ENTRIES LESS SERIOUS THAN A CIRCLED RED X MAY BE FOUND ON DA 2408-14.

1. NOMENCLATURE	2. MODEL	3. SERIAL NUMBER
HELICOPTER	UH-1B	60-3505

STATUS SYMBOL	FAULT	REASON FOR DELAY	DATE (Year, Day, Hour, MIN or SERV-ICE)	ENTRY APPROVED (Signature)	DATE (Day, Hour, MIN - Last Entry)
X	6JUL66 XMT INTER BOX LAMP BURNED OUT	REQ #13-6 NOT IN STOCK	6JUL66		

DA Form 2408-14

When it doesn't affect aircraft flight safety, you put the status symbol for the most serious fault on the gear that gives the aircraft firepower under "armament." The bird can **fly** without it.



IT'S YOUR JOB TO **KNOW**, NOT GUESS, WHAT GOES WHERE.

And, when it doesn't affect aircraft flight safety, the status symbol for the most serious fault on any gear that doesn't fall in the first three columns would go under "other."

Nuf said? Not quite.

It's possible that **any** equipment **might** have a fault that would affect the flight safety of the aircraft if it would damage or interfere with the proper functioning of items necessary for flight safety, even if it's not listed as a "safety of flight" item in the TM. Bounce that through your bean any time you transcribe any status symbol from block 16 (or from DA 2408-14) to block 7. That's one reason why you need an exact description of the fault in block 17 (or in column b of DA Form 2408-14).

Downgrade faults that affect flight safety and your bird may come smashing down.

Everything that affects that bird's ability to fly must be checked out to pick the symbol for the most serious fault to enter under "aircraft." So, you always check on all the gear that gets the bird into the air, keeps it up and helps it to land. That means you check status symbols on communications equipment and radar used for landing — even though they're electronic items.

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1. NOMENCLATURE	2. MODEL	3. SERIAL NUMBER
HELICOPTER	UH-1B	60-3505

STATUS SYMBOL a	FAULT b	REASON FOR DELAY c	DATE (From DA Form 2404 or 2408-13) d	ENTRY APPROVED (Signature) e	DATE (To DA Form 2408-13 or 2408-13) f
/	6 JUL 65 XM3 INTER BOX LAMP BURNED OUT	REQ #13-6 NOT IN STOCK	6JUL66		

DA Form 2408-14

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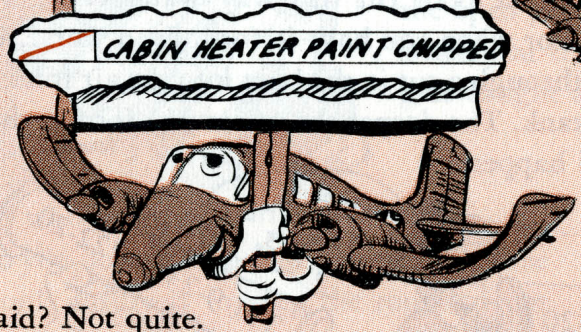

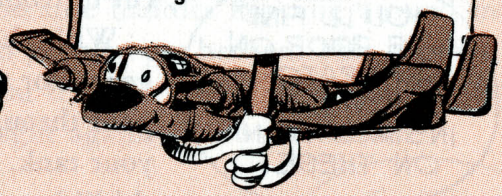

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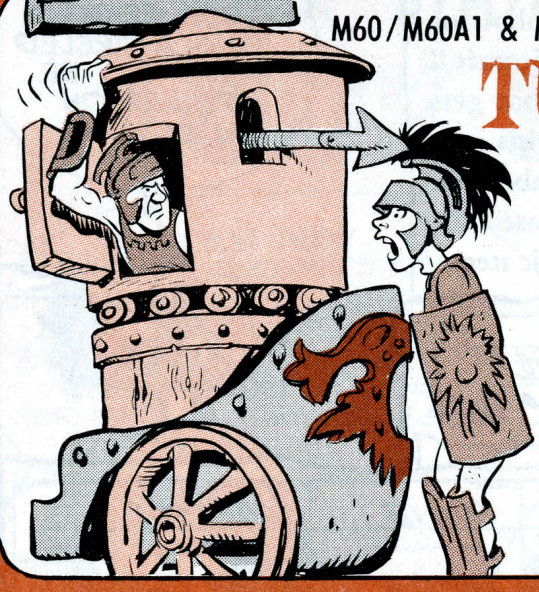
M60/M60A1 & M48A3 TANKS

TURRET SEAL TALK



The turret seal on your tank really takes a beating if you rotate the turret with the seal inflated. Para 2-24 of TM 9-2350-215-10 (Feb 65) gives you the dope on this.

But there's something else you should guard against—water trapped in the inflation system. Here's what you can do to keep the water out:

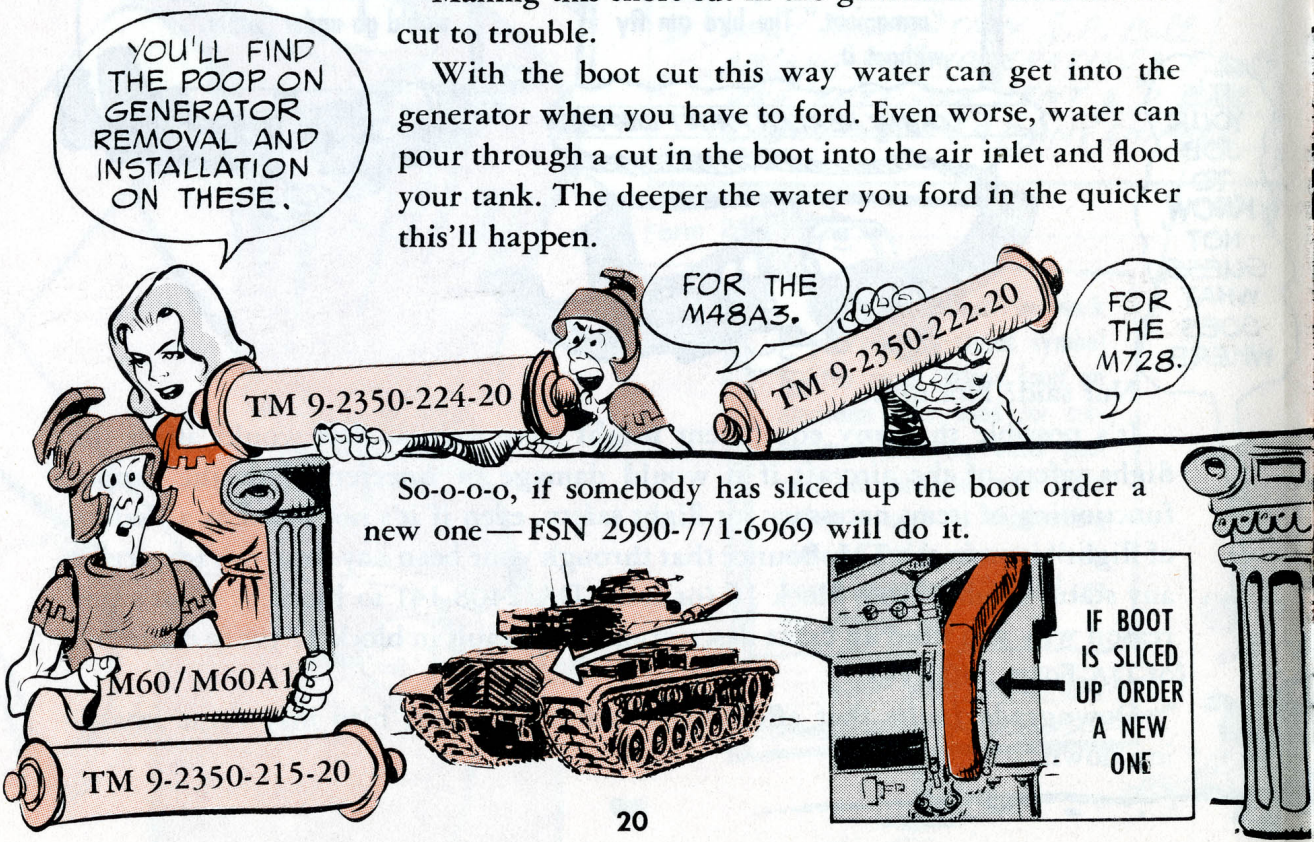
GENERATOR REMOVAL MANEUVER

If you have an M60/M60A1 or M48A3 tank or M728 (T118E1) combat engineer vehicle, this is for you . . .

Some mechanics have been cutting a slit in the generator boot so they can get at the generator mounting nuts without having to take off the hose clamps.

Making this short cut in the generator boot is a short cut to trouble.

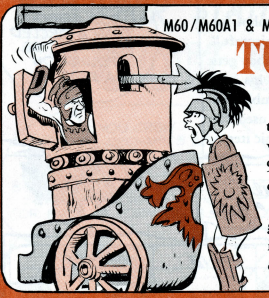
With the boot cut this way water can get into the generator when you have to ford. Even worse, water can pour through a cut in the boot into the air inlet and flood your tank. The deeper the water you ford in the quicker this'll happen.



So-o-o-o, if somebody has sliced up the boot order a new one—FSN 2990-771-6969 will do it.

M60/M60A1 & M48A3 TANKS

TURRET SEAL TALK



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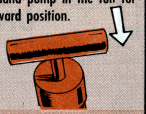
But there's something else you should guard against—water trapped in the inflation system. Here's what you can do to keep the water out:

1. After you finish letting all the air out of the turret seal, leave the bleed valve open.

2. Work the hand air pump a few times to force out any moisture that might be in the pump or in the seal.

3. Stop your pumping with the hand pump in the full forward position.



4. Close the turret seal bleeder valve when no more air or moisture comes out of it.

5. Wire or tape the hand pump handle lightly in place so that it can not be moved by accident but can easily be worked when you want to use it.

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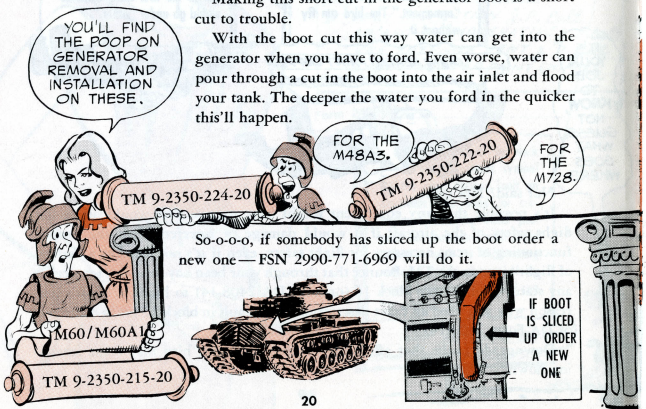
Making this short cut in the generator boot is a short cut to trouble.

With the boot cut this way water can get into the generator when you have to ford. Even worse, water can pour through a cut in the boot into the air inlet and flood your tank. The deeper the water you ford in the quicker this'll happen.



So-o-o-o, if somebody has sliced up the boot order a new one—FSN 2990-771-6969 will do it.

AMMO RACK ROUNDUP

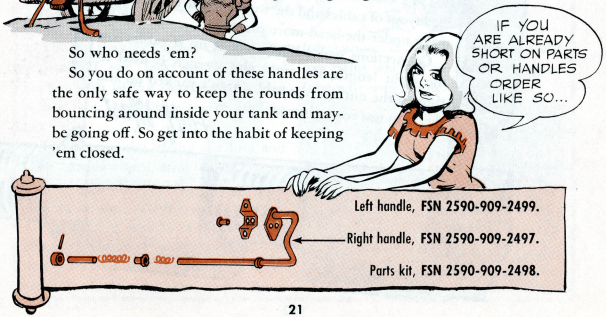
The right way to handle the ammunition rack handles on your M60 and M60A1 tanks is to keep 'em closed except when you're putting in or taking out a round.

For why?

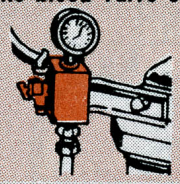
For because handles flopping around in the open position get broken. This happens when you traverse the turret and a handle gets caught against the turret basket.

So who needs 'em?

So you do on account of these handles are the only safe way to keep the rounds from bouncing around inside your tank and maybe going off. So get into the habit of keeping 'em closed.

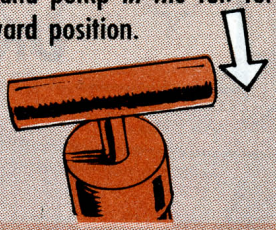


1. After you finish letting all the air out of the turret seal, leave the bleed valve open.



2. Work the hand air pump a few times to force out any moisture that might be in the pump or in the seal.

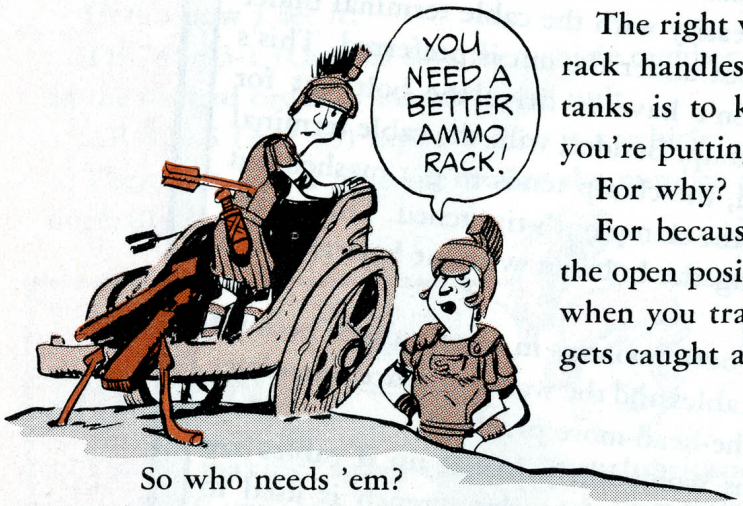
3. Stop your pumping with the hand pump in the full forward position.



4. Close the turret seal bleeder valve when no more air or moisture comes out of it.

5. Wire or tape the hand pump handle lightly in place so that it can not be moved by accident but can easily be worked when you want to use it.

AMMO RACK ROUNDUP



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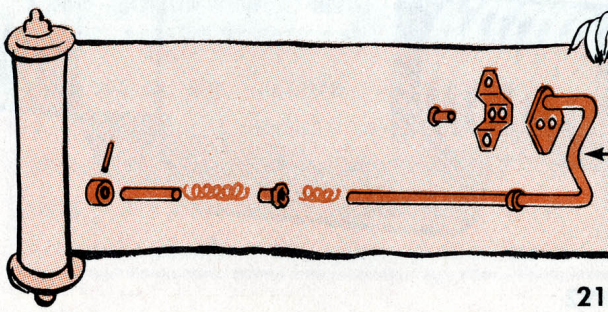


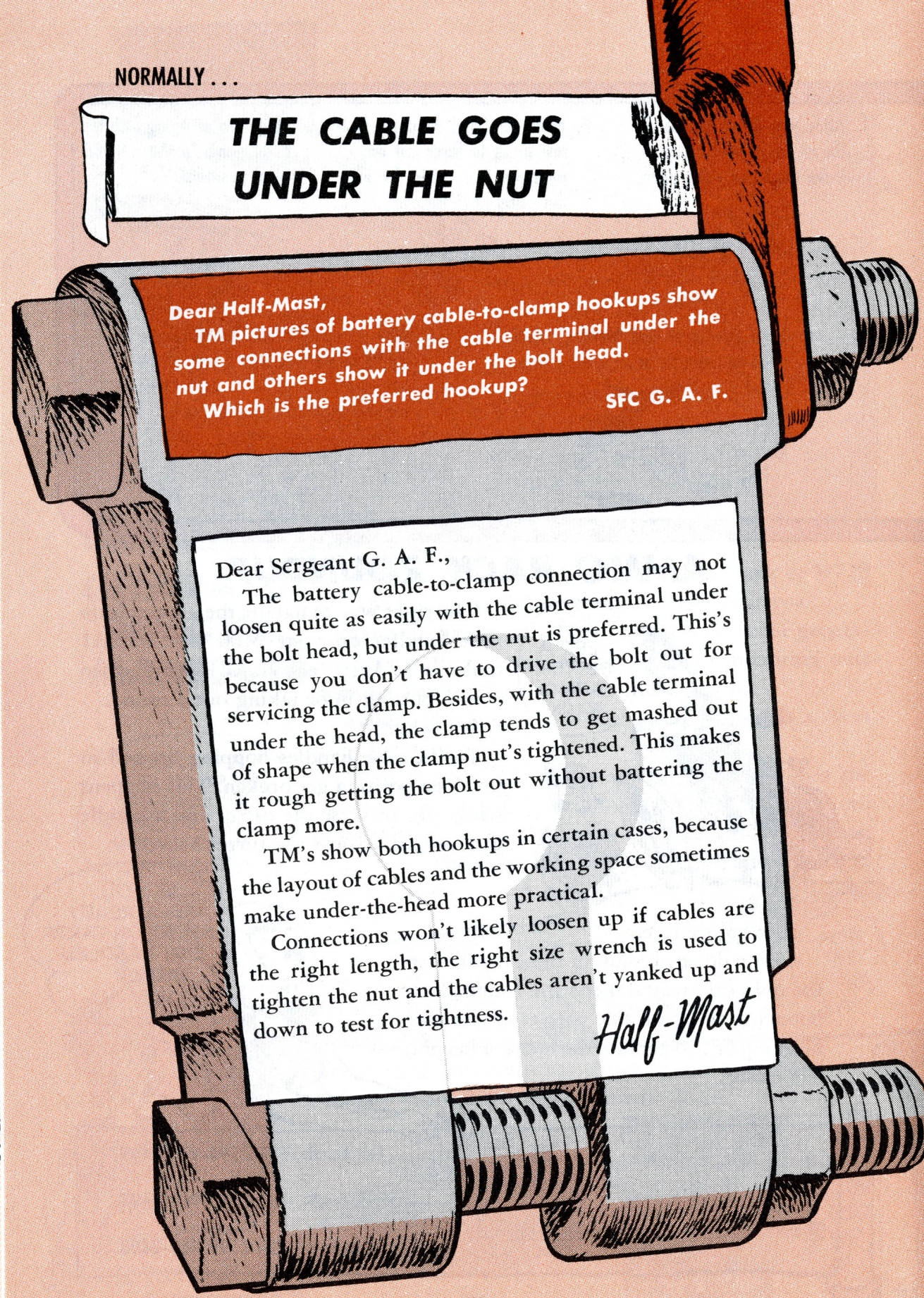
Left handle, **FSN 2590-909-2499.**

Right handle, **FSN 2590-909-2497.**

Parts kit, **FSN 2590-909-2498.**

NORMALLY . . .

THE CABLE GOES UNDER THE NUT



Dear Half-Mast,

TM pictures of battery cable-to-clamp hookups show some connections with the cable terminal under the nut and others show it under the bolt head.

Which is the preferred hookup?

SFC G. A. F.

Dear Sergeant G. A. F.,

The battery cable-to-clamp connection may not loosen quite as easily with the cable terminal under the bolt head, but under the nut is preferred. This's because you don't have to drive the bolt out for servicing the clamp. Besides, with the cable terminal under the head, the clamp tends to get mashed out of shape when the clamp nut's tightened. This makes it rough getting the bolt out without battering the clamp more.

TM's show both hookups in certain cases, because the layout of cables and the working space sometimes make under-the-head more practical.

Connections won't likely loosen up if cables are the right length, the right size wrench is used to tighten the nut and the cables aren't yanked up and down to test for tightness.

Half-Mast

Dear Half-Mast,

How do you number vehicles in order of march — trucks and their trailers with the same number, or in sequence? That is, would a truck in a convoy be, say, Number 3, and its trailer 3, or the truck 3 and the trailer 4?

Sgt J. A. L.

Dear Sergeant J. A. L.,

Here's how I see it:

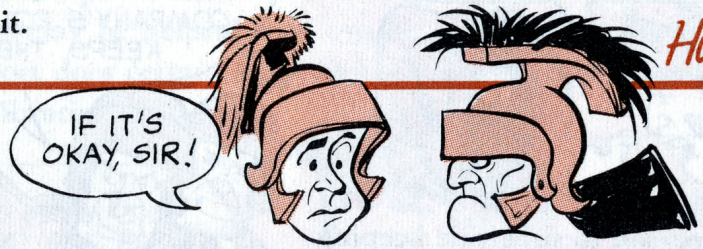
TB 746-93-1 (Oct 64) says the vehicle number should be its sequence number in the normal order of march in the unit.

AR 320-5 (Apr 65) says a trailer is a vehicle.

Therefore, you'd give the trailer the number after the number of the truck normally pulling it.

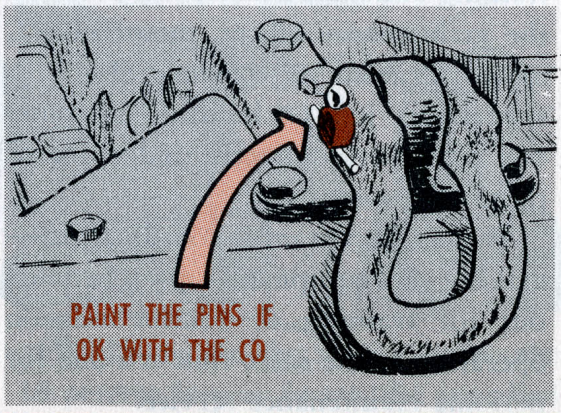
Half-Mast

PAINT THE PINS

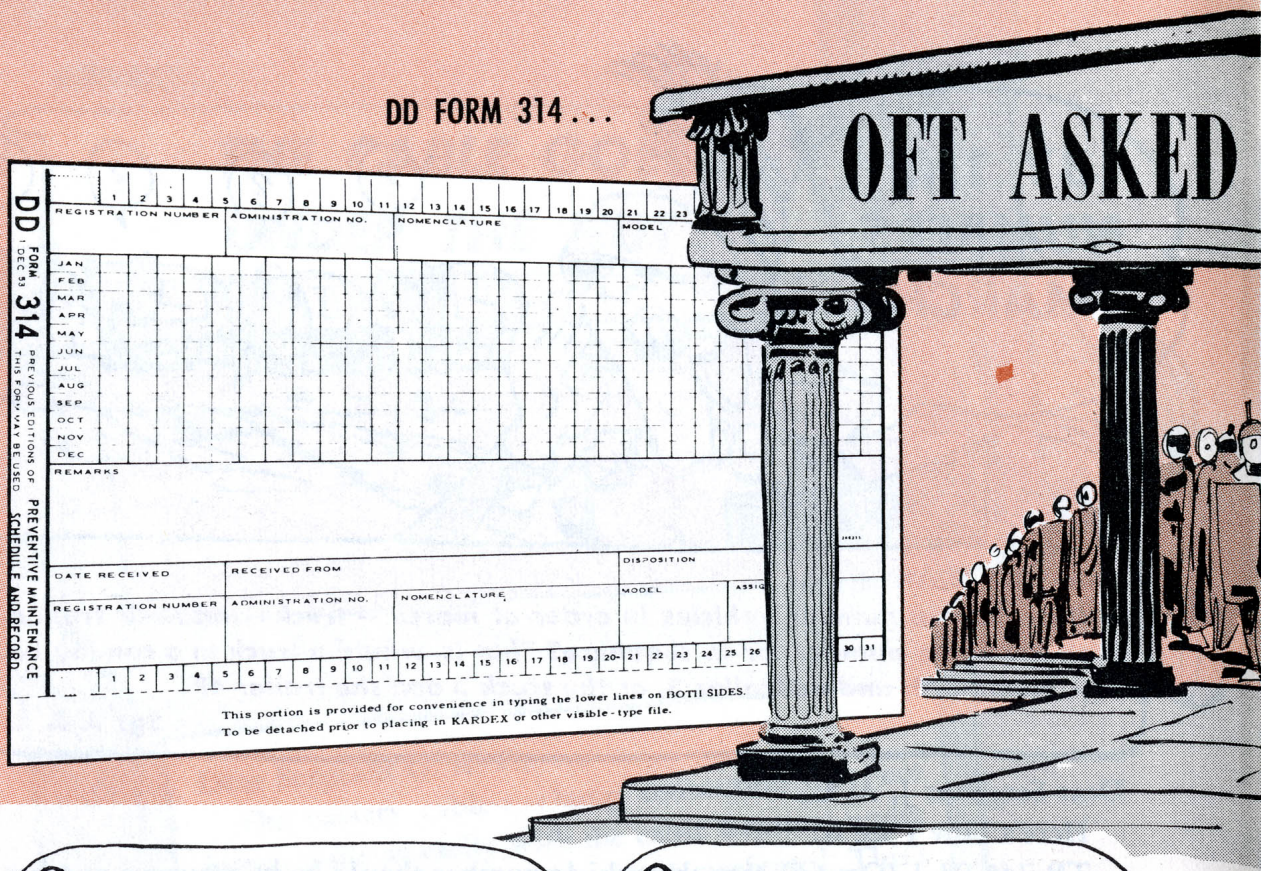


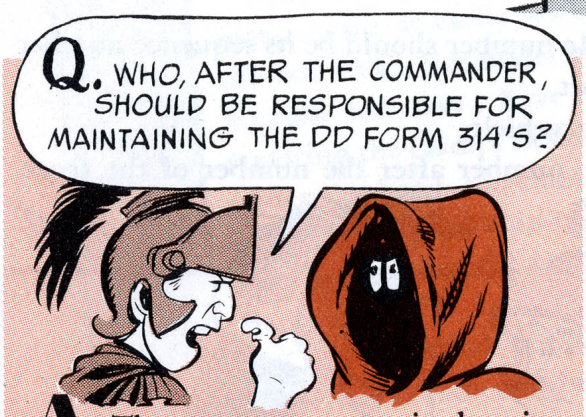
You're making some trouble for yourself if you mix up hinges and latches with lifting shackles and sling points—at least when you're reading LO's.

The pins in the lifting shackles and sling points don't really need to be greased periodically. A paint job will do just as well according to para 66, TM 9-273, "Lubrication of Ordnance Material." This paragraph points out that parts such as these pins don't move around much—so they don't need lubrication. If it's OK with the CO, just paint 'em and save some grease—lube-wise and elbow-wise.



DD FORM 314 . . . OFT ASKED





A. The person to supervise keeping of the DD Form 314's is the man who's in a position to keep tabs on operations, training and maintenance. He could be the maintenance officer, motor officer, motor sergeant or someone else in a supervisory job. Or he could be someone who works directly under one of those supervisors.

What's important is coordination—making sure equipment's not scheduled out for training or routine mission operation at the same time it's due for periodic maintenance service.

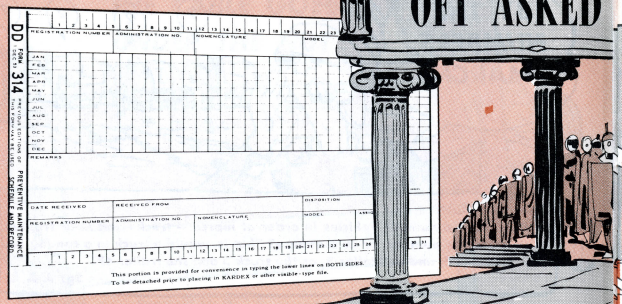
A. Para 3-3b(2) in Ch 2 to TM 38-750 says the DD Form 314 is maintained by "the commander having responsibility for the periodic service."

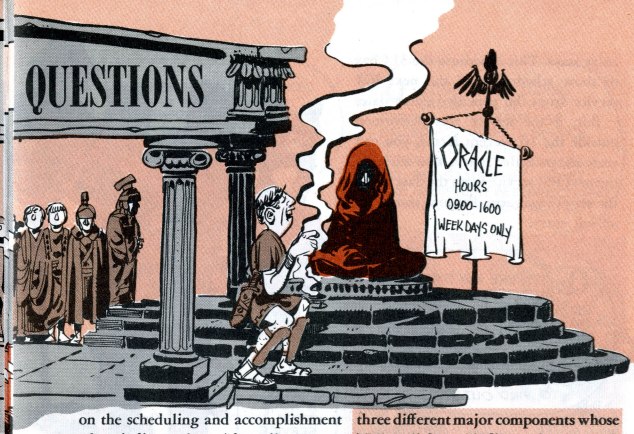
In cases of separate responsibility for split periodic services, you'll need duplicate 314's for smooth scheduling of these services.

And duplicate 314's help your commander to determine when equipment will be available and to keep informed

DD FORM 314 . . .

OFT ASKED QUESTIONS





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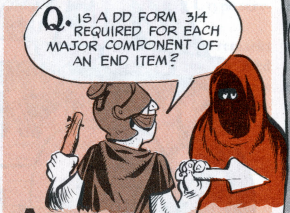
And duplicate 314's help your commander to determine when equipment will be available and to keep informed on the scheduling and accomplishment of periodic services. After all, no matter who actually performs the PM services, the unit commander has to make sure these services are performed.

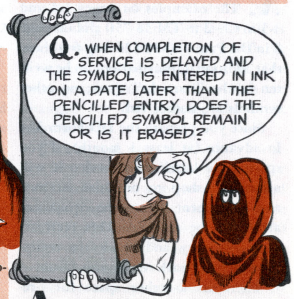
Duplicate 314's may be helpful too when direct support does certain services, like tool calibration.



A. Yes, if the TM for that component calls for periodic services.

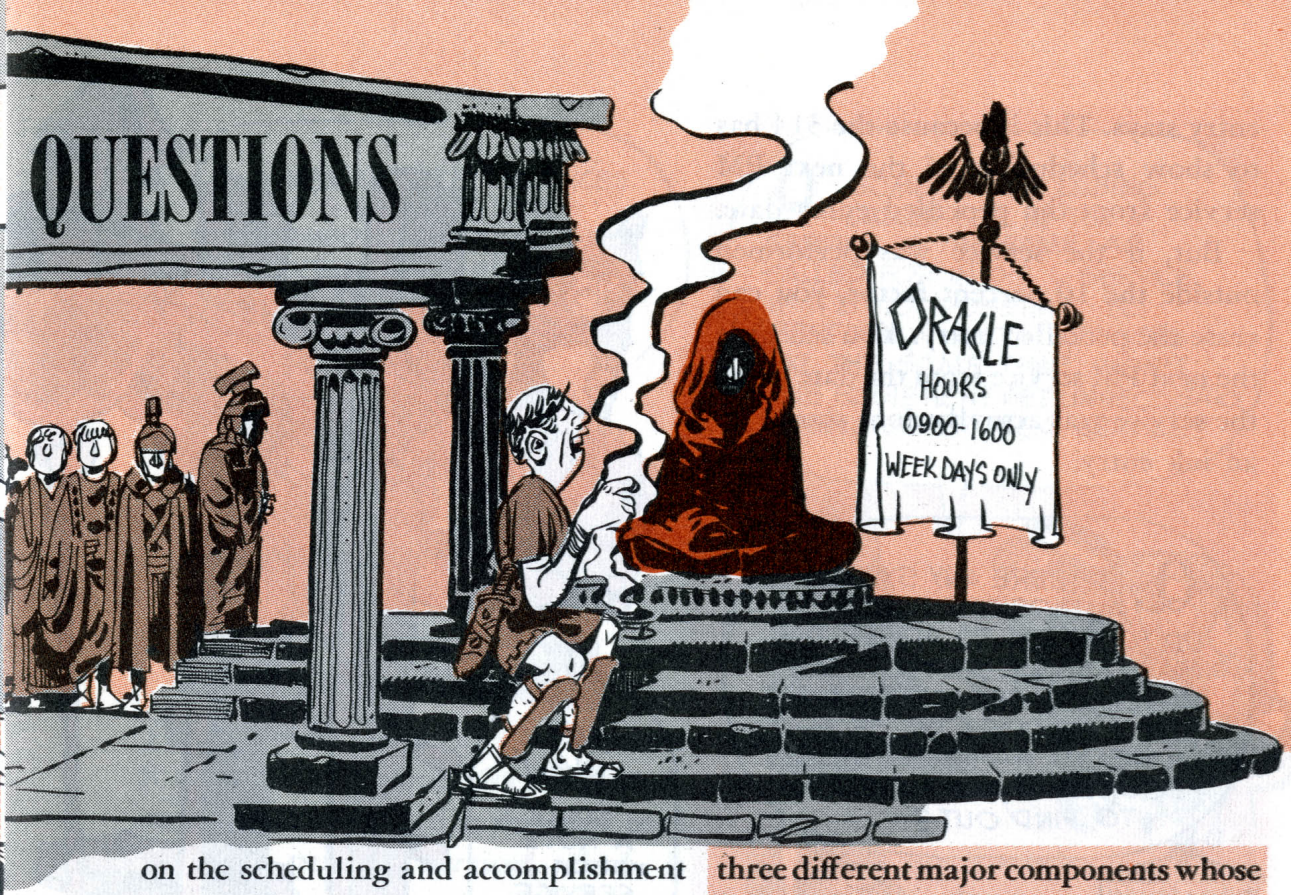
F'rinstance, the AN/MCC-6 telegraph-telephone terminal has at least three different major components whose TM's call for periodic services, so each gets a 314.

But, even in this case only one 314 is required if services for components can be performed at the same time (or within a 10 percent factor).



A. If you do the service inside the 10 percent leeway factor, the pencilled

25 MORE



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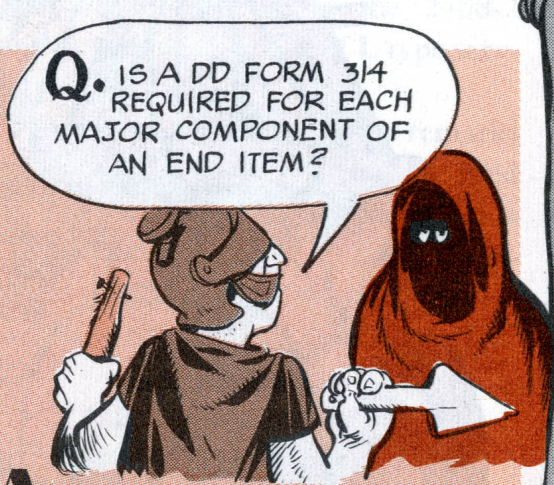

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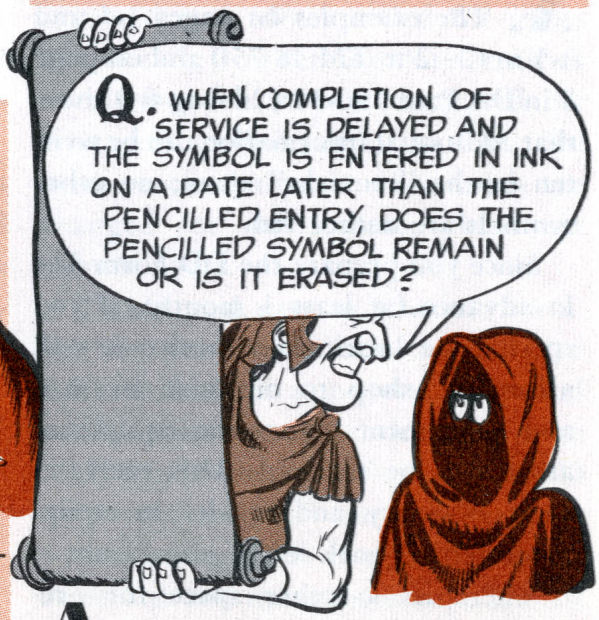

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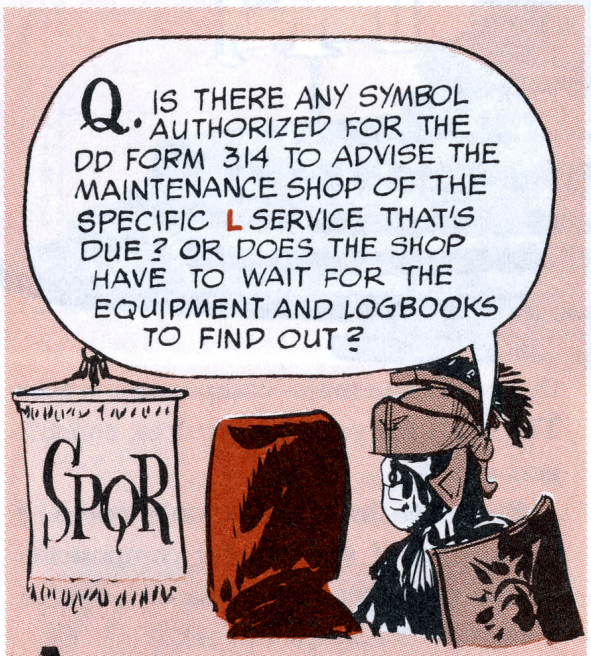
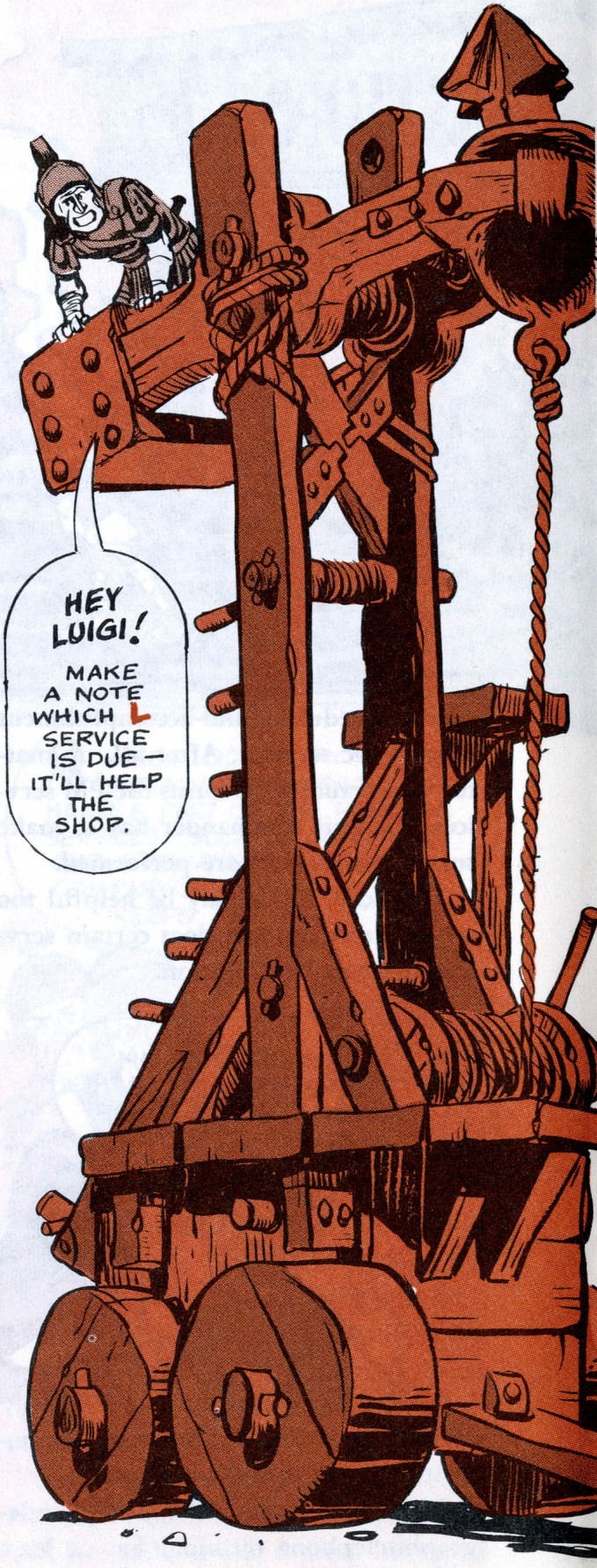
But, if the service was performed outside the 10 percent factor, you can erase the pencilled entry. You schedule the next PM service from the date when the service was actually done shown by an ink entry.



A. The examples on pages 3-4 and 3-5 in Ch 2 to TM 38-750 and on page, 8 in DA Pam 750-38 (24 Aug 64) show that additional information can be written in the "remarks" space; no other symbols are authorized.

Since you prepare the DD Form 314 in advance (at least 1 month), if you specify the lubrication service it will allow the shop to organize its men and equipment before the equipment arrives to be serviced. This increases shop efficiency and results in equipment getting back to the unit faster.

There is no other space for "remarks," tho, so remember to keep it short.



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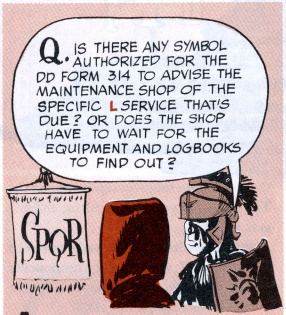

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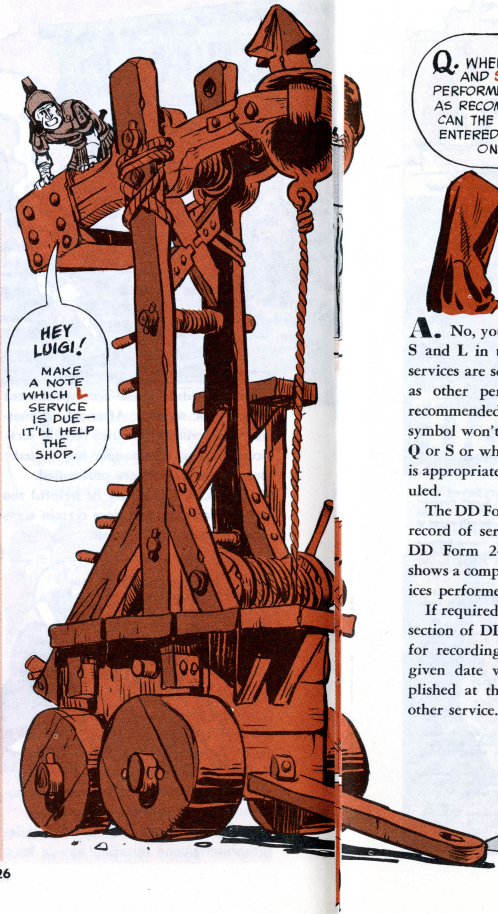

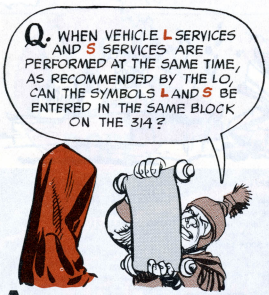

A. No, you never enter the symbols S and L in the same block. When L services are scheduled at the same time as other periodic services, which is recommended when possible — the L symbol won't be needed; just enter the Q or S or whatever authorized symbol is appropriate for the PM service scheduled.

The DD Form 314 is not an historical record of services performed, but the DD Form 2408-2 is, so the 2408-2 shows a complete record of L type services performed.

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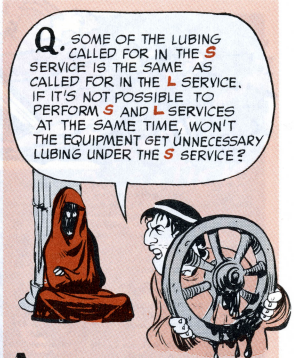
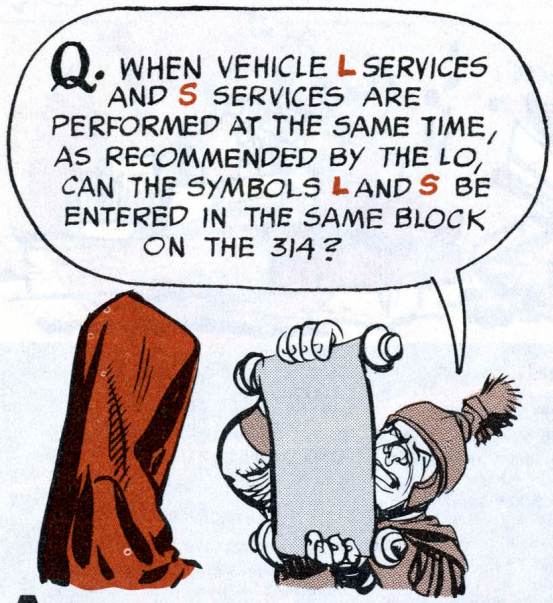


A. When the S service is not performed at the same time as the L service, you do S lubing only if inspection shows it's needed, like the TM says. But there's no "if" in the L service . . . you lube just as the LO calls for it.

Depending on which equipment's involved and what's called for in its LO, usually you can do some or all of the six-month L services along with the S services spelled out in the TM. The most practical time is when lubes are changed for the seasons, about six months apart.

This is real easy to schedule for L services that come "semi-annually or 3,000 miles," the same interval spelled out for S services. L services that come "1,000 miles or 6 months" and "6,000 miles or 6 months" can be worked in with S services too if mileage doesn't come first and upset this setup. The 10 percent leeway may help you get 'em together.

END



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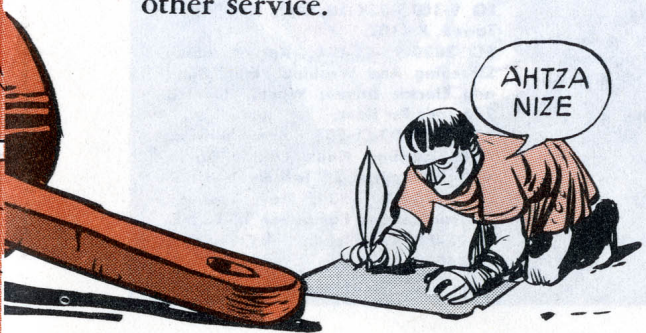

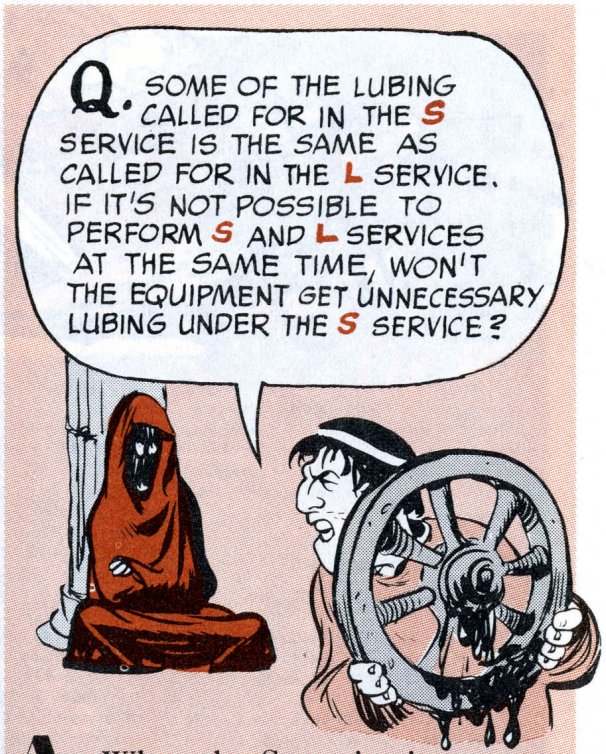

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END

A selected list of recent publications of interest to Organizational Maintenance Personnel. This is a list compiled from recent Adjutant General's Distribution Center Bulletins. For complete details see DA Pam 310-4 with latest changes.

TECHNICAL MANUALS

TM 1-10H-23C-4-20P, C2, Apr, OH-23.

TM 5-4110-209-15, Mar, Refrigeration Unit, Mechanical: Panel Type; Field Portable 150-Cu Ft Capacity, KECO Model F-5000R.

TM 5-4120-234-25P, May, Air Conditioner, Skid Mtd: Air Cooled; Electric Motor Driven; AC, 208-V, 3-Phase, 60 Cyc. 36,000 BTU (Redmanson Model CE-36M).

TM 5-4320-233-25P, Apr, Pump, Centrifugal, GED, Skid Mounted, 6-Inch, 1, 120-GPM Self Priming (Carver Model).

TM 5-6115-340-25P, Apr, Generator Set, GED, 5-KW, AC Single-Phase 120/240-V, 3-Phase 120/208-V, 400-Cycle, Skid Mounted (Hol-Gar Model CE-57-400AC).

TM 5-6230-204-15, Mar, Searchlight, Xenon Type, Infrared and Visible (FSN 6230-740-3280) VARO 9910, 9910A.

TM 5-6675-244-15, Apr, Target Set, Surveying: Circular Level and Optical Plummet In Tribrach W/Quick Release Mechanism (Wild Heerbrugg Model T-2).

TM 9-1005-247-12, Apr, XM2.

TM 9-1005-212-12P, C1, May, Organizational, Guns, Machine, M1917A1, M1919A4, M1919A6 and Mounts.

TM 9-1430-510-15P/1, Apr, Hawk.

TM 9-2300-216-10, C7, May, Gun, Self-Propelled, M107, Howitzer M110.

TM 9-2300-216-20, C3, May, Organizational, Gun, Self-Propelled M197, Howitzer, M110.

TM 9-2300-223-20P, C2, May, Stockage List of Tan-Automotive Repair Parts.

TM 9-2320-222-10, Apr, Recovery Vehicle, M88.

TM 9-2320-224-10, C3, Apr, Operator, Carrier, Personnel, M114, M114A1.

TM 9-2330-271-14, Apr, All Missile Systems (5).

TM 9-2350-217-10, C2, Apr, Operator, Howitzer, M108, M109.

TM 9-4935-500-15P/1, Apr, Hawk.

TM 9-6920-375-12P/1, May, Pershing.

TM 9-6920-461-12P, Apr, ENTAC.

TM 9-6920-471-12P, Apr, GML M-22.

TM 10-500-11, C1, Mar, Airdrop of Supplies and Equipment: Rigging M37 ¾-Ton Cargo Truck and ¾-Ton Emergency Repair Shop Truck.

TM 10-500-25, C1, Apr, Airdrop of Supplies and Equipment: Rigging Road Graders.

TM 11-6130-236-25P, May, Charger Battery PP-1451/U.

TM 11-6625-355-12, May, Audio Oscillators TS-421/U and TS-421A/U.

TM 11-6675-203-12, Apr, Viewer, Stereoscopic Roll Film, Photographic Interpretation AR-90A.

TM 11-6730-200-25P, May, Viewer, Still Picture AR-10(1).

TM 55-1000-209-12-2, May, Operator, Carrier, Personnel, M113.

TM 55-1510-201-10CL, C1, May, U-8.

TM 55-1510-201-20PMD, May, U-8.

TM 55-1510-201-20PMI, May, U-8.

TM 55-1510-201-20PMP, May, U-8.

TM 55-1510-202-10CL, May, O-1A.

TM 55-1510-202-20PMD, May, O-1A.

TM 55-1520-206-20, C2, May, OH-23.

TM 55-1520-209-20, C1, Apr, CH-47.

TM 55-2320-223, 10-1, Apr, Operator, Carrier, Cargo M116.

TM 55-4920-231-15, C1, Apr, Fixed and Rotor Wing.

MODIFICATION WORK ORDERS (ALL NORMAL)

MWO 9-1240-214-50/1, May, Rifle, Recoilless, 106MM, M40A1 on Mt. M79.

MWO 9-2300-224-30/21, Apr, Organizational, Carrier, Personnel, M113.

MWO 9-2350-215-20/24, C1, May, Organizational, Tank, Combat, 105-MM Gun, M60A1.

MWO 9-2350-217-20/7, May, Howitzers M108, M109.

MWO 10-1670-215-20/4, May, Organizational, Parachute, Cargo.

MWO 55-1510-202-34/9, May, Elimination of Arming Cords on Canopy: and Change in Packing Procedures.

MWO 55-1510-206-34/63, C1, May, CV-2.

MWO 55-1510-206-34/70, C1, May, CV-2.

MWO 55-1520-202-34/6, C2, Jun, CH-34.

MWO 55-1520-209-20/41, C1, Jun, CH-47.

MWO 55-1520-209-34/82, C1, Jun, CH-47.

MWO 55-1520-209-34/118, Jun, CH-47.

MWO 55-1520-211-30/4, May, UH-1A, UH-1B.

MWO 55-1520-211-34/38, C2, Jun, UH-1A, UH-1B.

TECHNICAL BULLETINS

TB 9-1400-299-10/1, May, Missile and Rocket Systems Equipment Improvement Report and Maintenance Digest.

TB 9-1400-549-10/1, May, Missile and Rocket Systems Equipment Improvement Report and Maintenance Digest.

TB 55-1510-204-30/2, Jun, OV-1.

TB 55-1510-205-30/1, Jun, U-1.

TB 55-1510-206-30/6, Jun, CV-2.

TB 55-1520-211-20/6, Jun, UH-1A, UH-1B.

TB 55-6650-300-15, Jun, Fixed and Rotor Wing.

MISCELLANEOUS

AR 705-19, May, Electrical Systems in Motor Vehicles.

AR 750-32, May, Air Delivery, Parachute Recovery and Aircraft Personnel Ejection Systems.

DA Cir 385-12, Jun, Safe Operation of Truck, Utility, ¼-Ton, 4x4, M151.

DA Form 3122, Apr, Request for Issue or Turn-In (3 Pt Set). Prescribed by AR 735-28 and AR 735-29. Revision of DD Form 1150, 1 Oct 57, which may be used until exhausted.

LO 5-3810-232-12-1, -2, -3, and -4, Apr, Crane, 20 Ton, 30 Foot Boom, 2 Engines DED, 4x4, Rough Terrain, W/Bulldozer And Earthmoving Blade (American Hoist And Derrick Co Model 2380), W/Engines Cummins Models V8-265 Carrier And JN-6-1 Crane.

LO 5-6115-339-12, Mar, Generator Set, Gas Turbine Engine: 60KW, AC, 120/208-240/416V, (Airsearch Model GTGE 70-9-2) W/Engine Airsearch Model GTP 70-52.

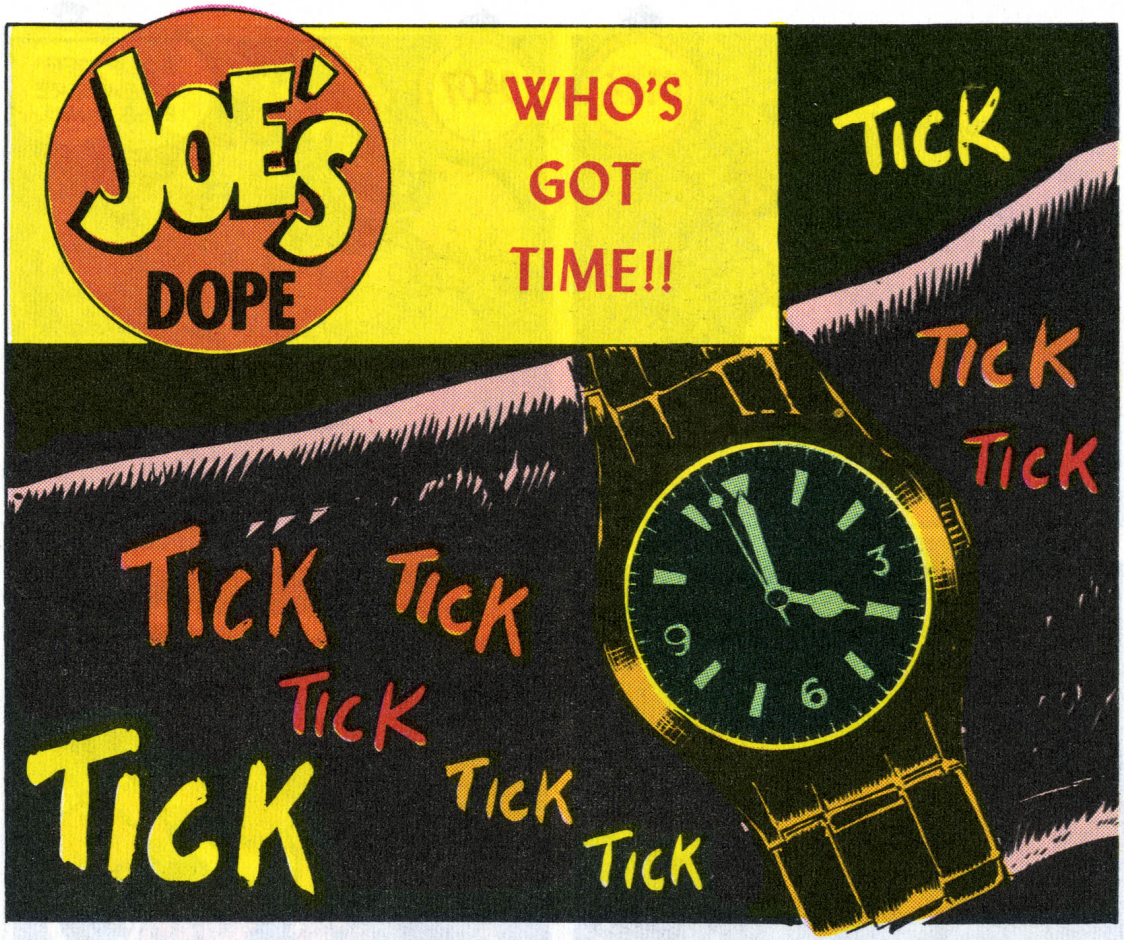
LO 9-1015-234-10, Apr, Howitzer, Towed, XM102.

SC 3820-93-CL-E04, Apr, Crushing, Screening And Washing Plant: Diesel and Electric Driven; Wheel Mounted; 225 Tons Per Hour.

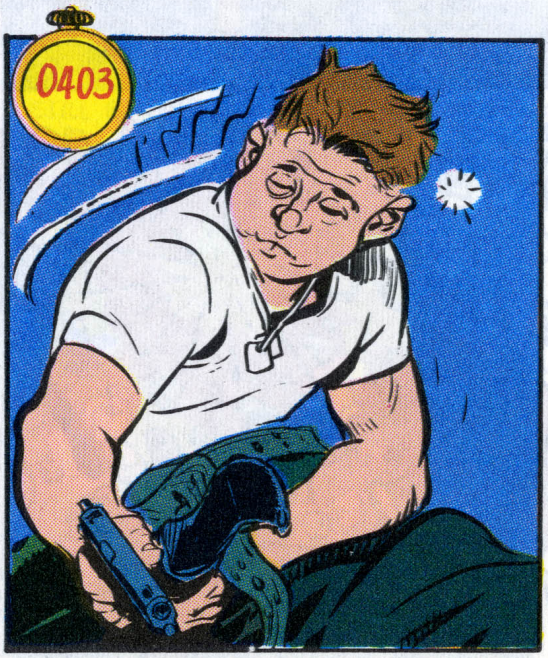
SC 3820-93-CL-E08, Apr, Washing And Screening Plant: Electric Driven; Wheel-Mounted; 75 Ton Per Hour.

SC 5180-91-CL-R34, May, Tool Kit, Communications Equipment TK-145/G.

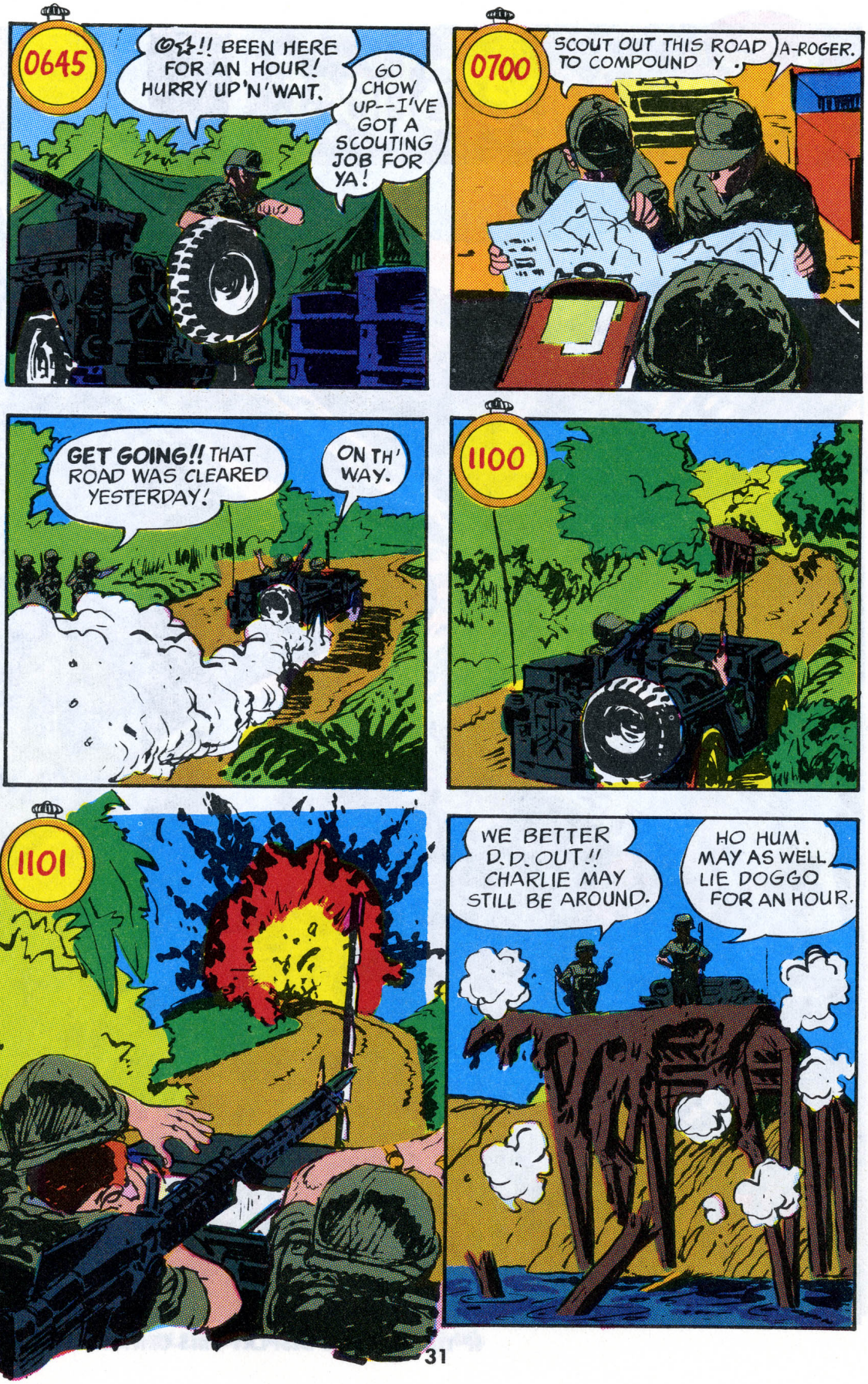
TC 23-10, Apr, Operator & Crew, Rifle, XM16E1.



IT'S 0400, THIRTY-SEVEN CLICKS OUT IN THE BOONIES, AND FOR US GUYS IT MAY BE A NUMBER ONE DAY OR A NUMBER TEN DAY, DEPENDIN' ON WHO GETS ZAPPED.



YAWNNN
WORKS FINE.
0404
CLANK
CLINK
0407
GOOF OFF SOMEWHERE ELSE, BUGS.
0420
0422
ZINGG
CRASH
0423
RATTATTATTATTAT
ZIP
@☆!!!
SNIPERS... CAN'T EVEN SHAVE IN PEACE!
BAM
POW
ZING


0645
@☆!! BEEN HERE FOR AN HOUR! HURRY UP'N'WAIT.
GO CHOW UP--I'VE GOT A SCOUTING JOB FOR YA!
0700
SCOUT OUT THIS ROAD TO COMPOUND Y.
A-ROGER.
GET GOING!! THAT ROAD WAS CLEARED YESTERDAY!
ON TH' WAY.
1100
1101
WE BETTER D.D. OUT!! CHARLIE MAY STILL BE AROUND.
HO HUM. MAY AS WELL LIE DOGGO FOR AN HOUR.

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BUL

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

QUIPMENT ... *Take care of it*

LLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

1203
WELL! WAITED LONG ENOUGH... MIGHT AS WELL FORD HERE... WHERE IT'S SHALLOW.
1300
HALT!
...PLAYBOY
...BUNNY
1305
...WELL... HOW ARE THINGS HERE IN COMPOUND Y... THE GAS HOUSE OF THE WORLD?
...AND SO, AS THE LAST OF TH' BAMOUBIA WAS POLISHED OFF, WE 'N' MY SLOPE HEADED OUT, ETC.
HAS SHE GOT A FRIEND?
1405
CHOI-OI! AM I LATE! MAN, I GOTTA SPLIT!... SEE YA.
RIGHT.
1700
BOY! WOTTA DAY... I'VE HAD IT...
DELTA 9 MOTOR PARK
DELTA 9 RENT-A-CAR

1730
WOW! IT'S CHOW TIME... WONDER WOT KINDA B RATIONS ON THE MENU.
1750
SO WOT'S NEW? DID YA BURN Y'R DRAFT CARD?
NAW! IT'S AGAINST REGULATIONS.
1751
WUMP
CHARLIE'S 81'S ARE CREAMIN' TH' MOTOR PARK.
GET THAT 151 UNDER COVER. IT'S GOT OUR BEST COMMO SET ABOARD.
GLAK SHE WON'T START!!
GRIND, GRIND WHEEZ GRIND
THUNK

WHAM
HEY! CONNIE RODD IS VISITING HERE IN THIS HOSPITAL.
WOW!
LOOK! IT'S CONNIE.
...AND THAT'S HOW I ALMOST BOUGHT IT, CONNIE...BLASTED 151 WOULDN'T START...
CRUMMY JEEP!!
?
HEY, TIGER! HOW'S IT GOIN'? BY TH' WAY... WE FOUND OUT WHY Y'R 151 DIDN'T START.
A LOOSE BATTERY TERMINAL! ...YOU DIDN'T PULL PM AFTER ALL THAT ROUGH TERRAIN!
SO!!! I'M A FRONT-LINE TROOPER... WE GET PAID FOR FIGHTIN'!! WE DON'T HAVE ANY TIME FOR THAT STUFF.
NO TIME?! YOU HAD PLENTY OF TIME TODAY!! ... YOU HAD AN HOUR AT THE BRIDGE... YOU HAD AN HOUR AT COMPOUND Y... YOU HAD AN HOUR BEFORE CHOW!! NO TIME FOR PM? YOU BET YOUR SWEET LIFE YOU HAD PLENTY OF TIME!!

BE YOUR OWN INSPECTOR
(WITH ACCENT ON "SHOOT!")

M107 Gun and M110 Howitzer

Here's a handy guide for you crewmen to check out your 175-mm self-propelled gun or 8-in howitzer.

The M107 and M110 are the same in every way except for their louden-go-boomers so that this one guide will go for both.

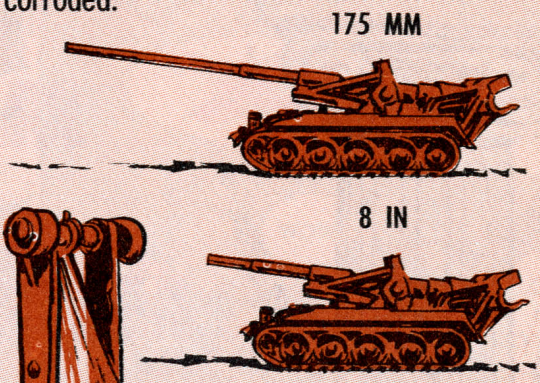
One thing about these latest additions to the artillery family of weapons is that they have a lot more muscle per square foot than their ancestors. Which is real fine—saves your own muscle-power. But hydraulic and electrical power need special attention, remember that.

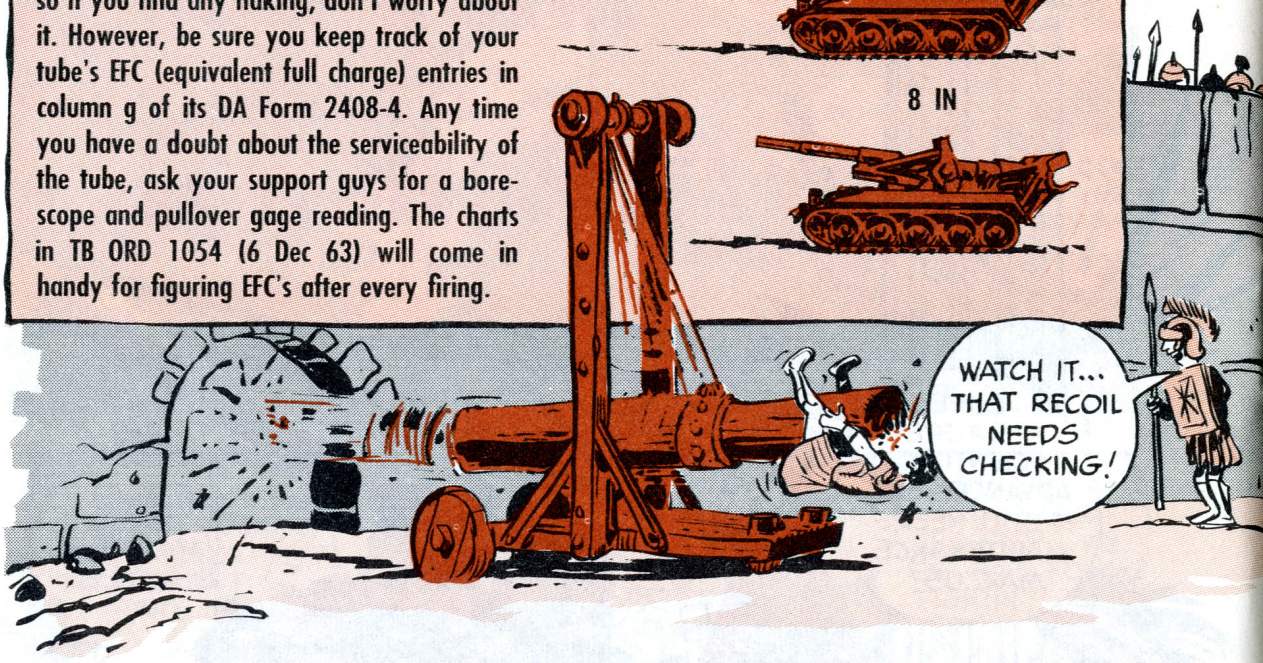
Here're some defects that could really foul up your firing mission. So, get on 'em quick and either fix 'em yourself or get the word to support.

P.S. MORE

CANNON TUBES—Lands raised, chipped, corroded.

The tube on the 175-mm is chrome-plated, so if you find any flaking, don't worry about it. However, be sure you keep track of your tube's EFC (equivalent full charge) entries in column g of its DA Form 2408-4. Any time you have a doubt about the serviceability of the tube, ask your support guys for a bore-scope and pullover gage reading. The charts in TB ORD 1054 (6 Dec 63) will come in handy for figuring EFC's after every firing.





BREECH MECHANISM

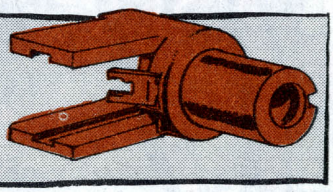
LEVELING PLATES—Chipped, painted, dirty.

(Like the TM says, protect these plates at all times. Especially, don't lay tools and other stuff on 'em. They've got to be in A-1 shape for bore-sighting. Clean these plates after every day's firing — and don't paint 'em.)

CAM—Chipped, broken; screws loose, cross-threaded. Check to see if the cam follower roller isn't bent or frozen.

M35 FIRING MECHANISM—Won't work; compression springs weak, won't cock and fire; hammer guide yoke burred, corroded; hammer sear spring missing, put in upside down; hammer operating sear installed backwards (see Fig 105 in your -10 TM); hammer and cap burred, corroded, carboned up.

FIRING MECHANISM HOUSING—Housing rusty, dirty, corroded; extractors bent, damaged, rusty.



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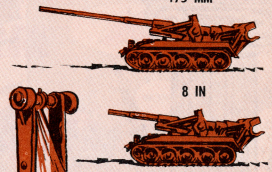
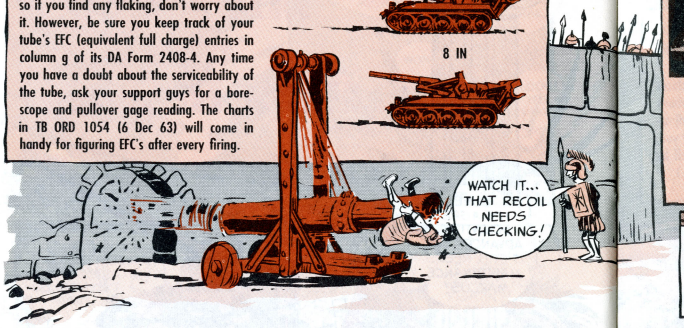
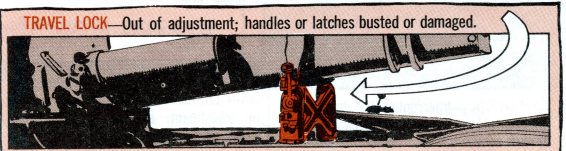
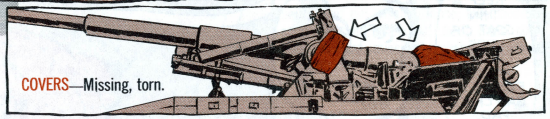




TRAVEL LOCK—Out of adjustment; handles or latches busted or damaged.



(If it needs adjusting, get the dope out of Fig 160 in your -20 TM. You want to check the travel lock in both the travel and fire positions. And doublecheck the shaft on the T-handle. It bends real easy. When you engage or disengage the travel lock, remember, the weapon must be in battery and the tube should be elevated — using the handcrank. Don't use power! And remember this: to prevent injury to the weapon, make sure it is in travel lock position any time the vehicle's being moved — and that it stays in travel lock till you're about set to fire.)

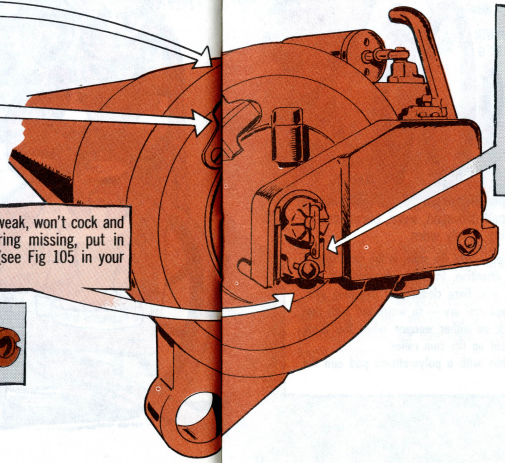


COVERS—Missing, torn.

BREECH MECHANISM ASSEMBLY (Breech closed)

LEVELING PLATES—Chipped, painted, dirty. (Like the TM says, protect these plates at all times. Especially, don't lay tools and other stuff on 'em. They've got to be in A-1 shape for boresighting. Clean these plates after every day's firing — and don't paint 'em.)

CAM—Chipped, broken; screws loose, cross-threaded. Check to see if the cam follower roller isn't bent or frozen.



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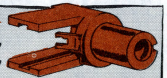
FIRING MECHANISM HOUSING—Housing rusty, dirty, corroded; extractors bent, damaged, rusty.

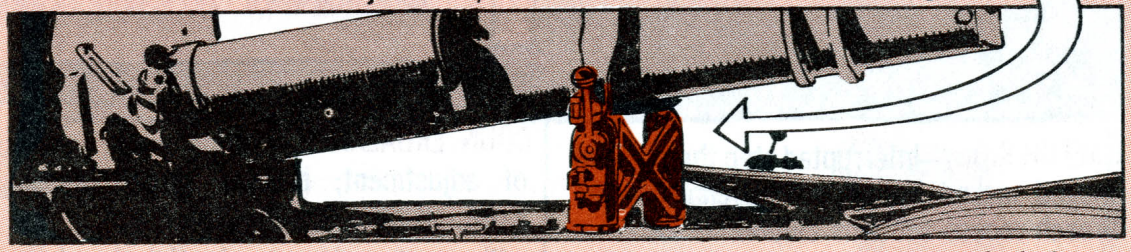


FIRING GROUP BLOCK—Won't operate smoothly; follower roller nicked, burred; follower spring weak, broken; knob cracked, broken; knob pin missing, worn; carrier lugs broken, worn so much that they let the firing mechanism turn; firing pin damaged, broken; firing pin retainer missing, bent. (Never pull the lanyard unless the firing block's in the closed or firing position — otherwise you'll ruin the firing pin.)

LANYARD LEVER AND ROPE—Lever bent, broken; lever pin worn—won't hold in groove; lanyard rope frayed, cut; S-hook bent, deformed; knob (plastic or wood) missing, broken—wooden knob should not be painted.

MORE

TRAVEL LOCK—Out of adjustment; handles or latches busted or damaged.



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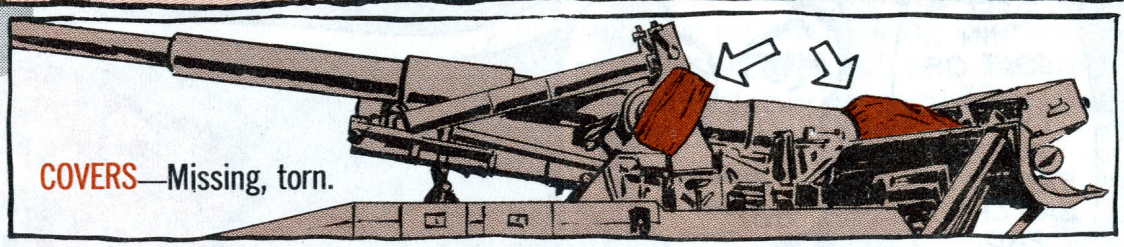
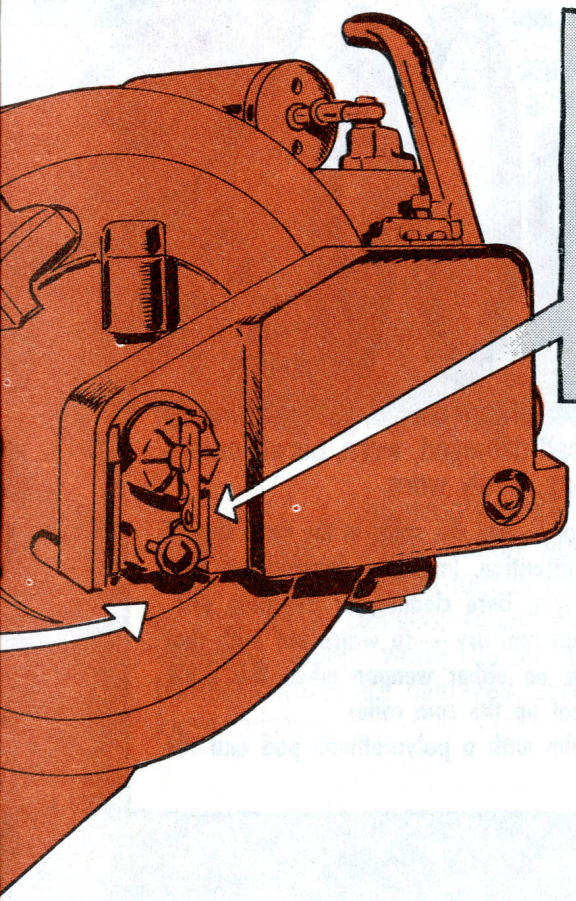


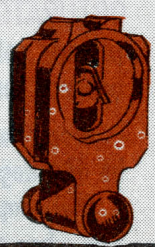
COVERS—Missing, torn.

ASSEMBLY (Breech closed)



FIRING GROUP BLOCK—Won't operate smoothly; follower roller nicked, burred; follower spring weak, broken; knob cracked, broken; knob pin missing, worn; carrier lugs broken, worn so much that they let the firing mechanism turn; firing pin damaged, broken; firing pin retainer missing, bent. (Never pull the lanyard unless the firing block's in the closed or firing position — otherwise you'll ruin the firing pin.)

LANYARD LEVER AND ROPE—Lever bent, broken; lever pin worn—won't hold in groove; lanyard rope frayed, cut; S-hook bent, deformed; knob (plastic or wood) missing, broken—wooden knob should not be painted.



PS MORE

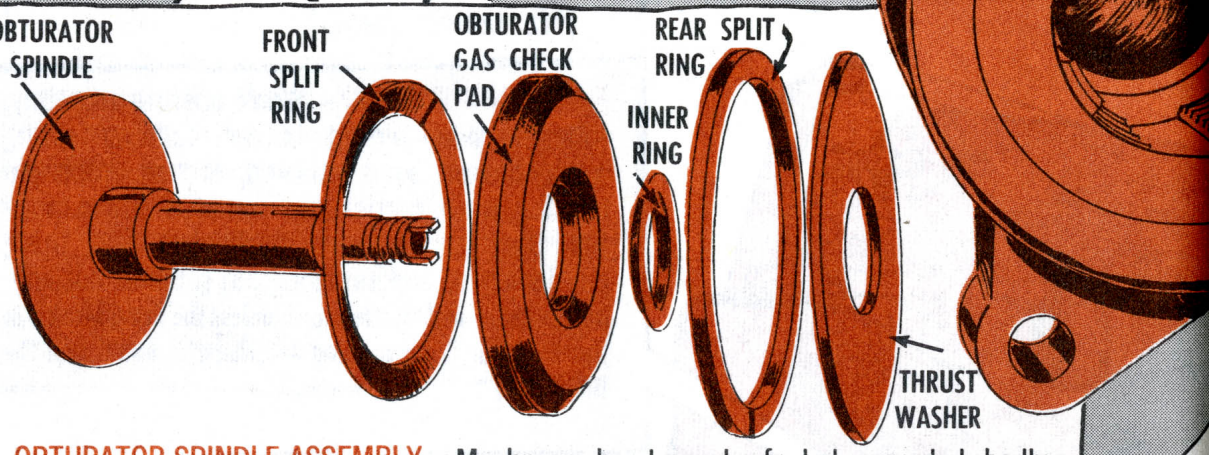
BREECH MECHANISM

BREECH RING—Interrupted step thread damaged, nicked, burred; powder chamber and breech recess contains carbon.

(Badly worn bottom threads are your clue that the thrust washer on the breechblock carrier hinge pin is worn out. For that matter, a worn washer could also be at fault if you run into binding when you're opening or closing the breechblock.)

COUNTERBALANCE—Spring weak; unit out of adjustment; bracket screws missing, loose; cylinder scored; collar worn.

(You can't see the spring, but if the breech closes hard, you'll know the spring's shot or — what's more likely — the counterbalance's out of adjustment. Support'll have to replace the spring for you, but you can adjust the counterbalance yourself by following the poop in Fig 107 of your -10 TM.)



OBTURATOR SPINDLE ASSEMBLY—Mushroom head powder-fouled, corroded, badly pitted; split rings chipped, corroded; gas check pad damaged, worn, burnt, deteriorated; inner ring damaged; thrust washer missing, badly worn.

(Don't forget, there're two split rings — front and rear — and the splits in the rings should be 180 degrees apart. The gas check pad needs special attention. Improper cleaning will ruin it. Use soap and water only . . . no cleaning solvents, gas, bore cleaner, or anything else. And when the gas check pad's in place, it has to be kept real dry — so watch out with that lube, eh? Another reminder: Never open the breechblock on either weapon when the firing block assembly's in the "disassembly" position. It'll beat up the cam roller.

So's you don't get mixed up — the M107 uses a shim with a polyurethene pad and the M110 uses a Gerdom-type pad.)

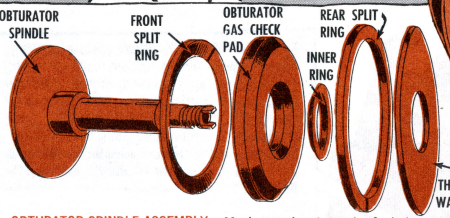
BREECH MECHANISM ASSEMBLY (Breech open)

BREECH RING—Interrupted step thread dammaged, nicked, burred; powder chamber and breech recess contains carbon.

(Badly worn bottom threads are your clue that the thrust washer on the breechblock carrier hinge pin is worn out. For that matter, a worn washer could also be at fault if you run into binding when you're opening or closing the breechblock.)

COUNTERBALANCE—Spring weak; unit out of adjustment; bracket screws missing, loose; cylinder scored; collar worn.

(You can't see the spring, but if the breech closes hard, you'll know the spring's shot or — what's more likely — the counterbalance's out of adjustment. Support'll have to replace the spring for you, but you can adjust the counterbalance yourself by following the poop in Fig 107 of your -10 TM.)



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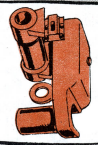
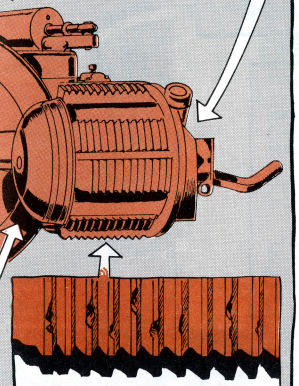
So's you don't get mixed up — the M107 uses a shim with a polyurethene pad and the M110 uses a Gerdom-type pad.)

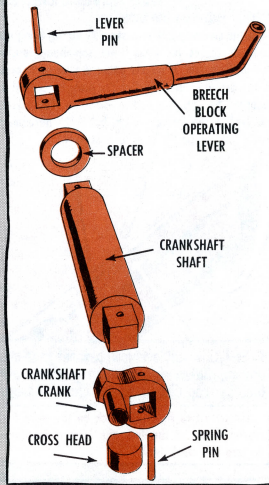
BREECHBLOCK CARRIER ASSEMBLY—Carrier chipped; operating handle latch mounting screws loose, missing; latch spring weak; hinge pin rusty; cotter pin worn, broken; operating lever bolt badly worn; carrier thrust washer missing, damaged.





BREECHBLOCK—Interrupted threads nicked, burred, chipped, badly worn, rusty, corroded, powder-fouled; primer vent dirty, clogged; roller pivot damaged; roller worn; cotter pin busted; control arc damaged, screw loose, missing.

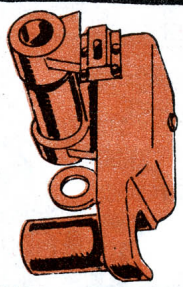
BREECHBLOCK OPERATING GROUP—Handle bent; lever pin missing, loose; lever bearing scored, nicked; crankshaft bent; crank chipped; pin bent, missing; crosshead cracked, chipped.

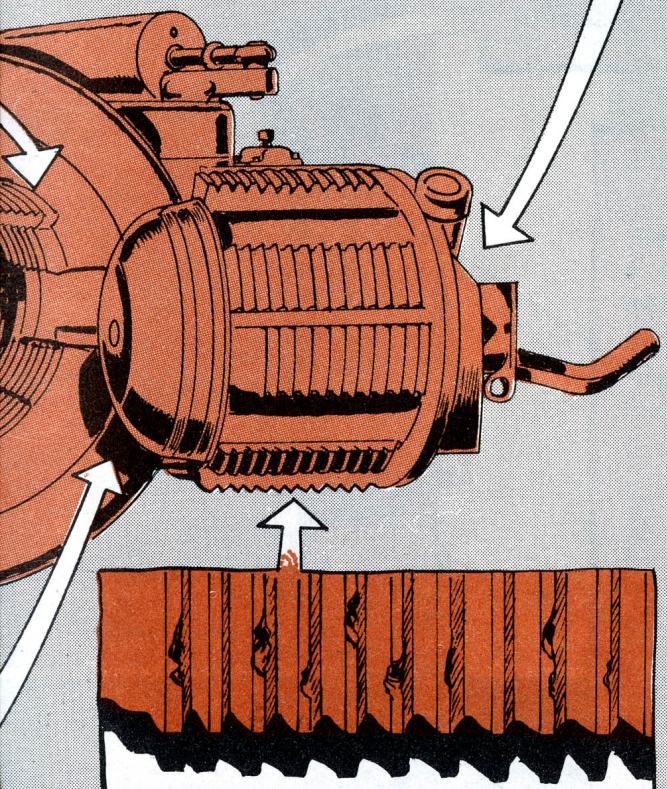


MORE

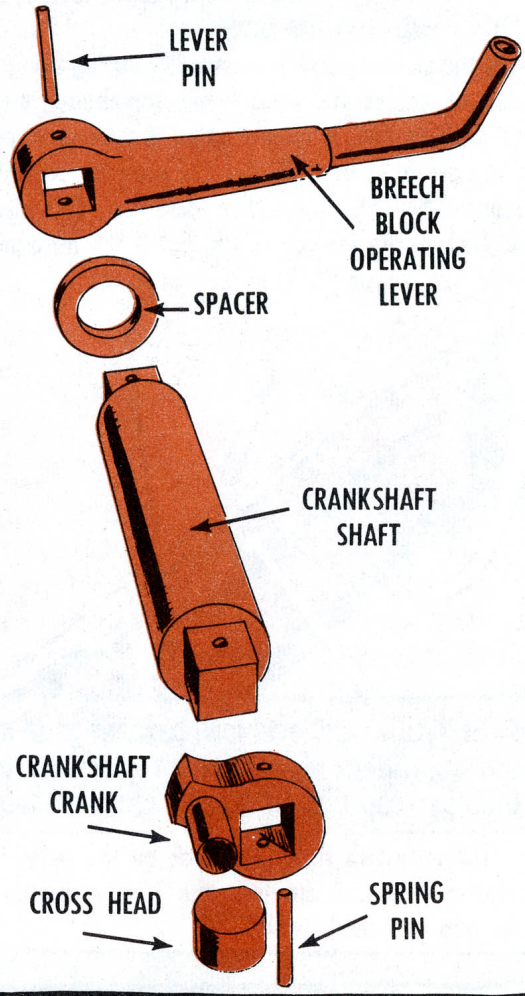
ASSEMBLY (Breech open)

BREECHBLOCK CARRIER ASSEMBLY—Carrier chipped; operating handle latch mounting screws loose, missing; latch spring weak; hinge pin rusty; cotter pin worn, broken; operating lever bolt badly worn; carrier thrust washer missing, damaged.



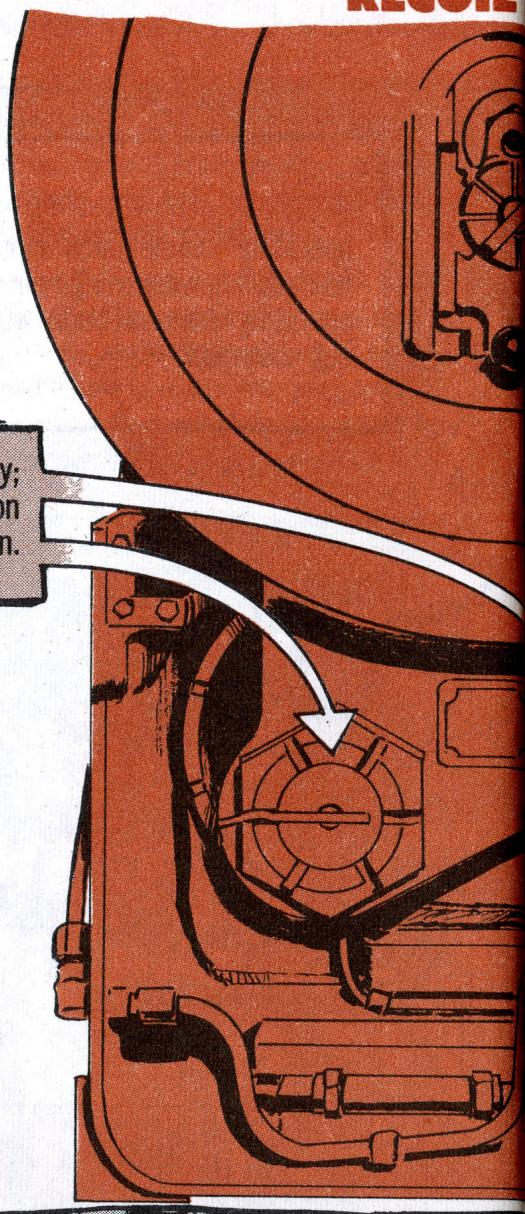


BREECHBLOCK OPERATING GROUP—Handle bent; lever pin missing, loose; lever bearing scored, nicked; crankshaft bent; crank chipped; pin bent, missing; crosshead cracked, chipped.



BREECHBLOCK—Interrupted threads nicked, burred, chipped, badly worn, rusty, corroded, powder-fouled; primer vent dirty, clogged; roller pivot damaged; roller worn; cotter pin busted; control arc damaged, screw loose, missing.

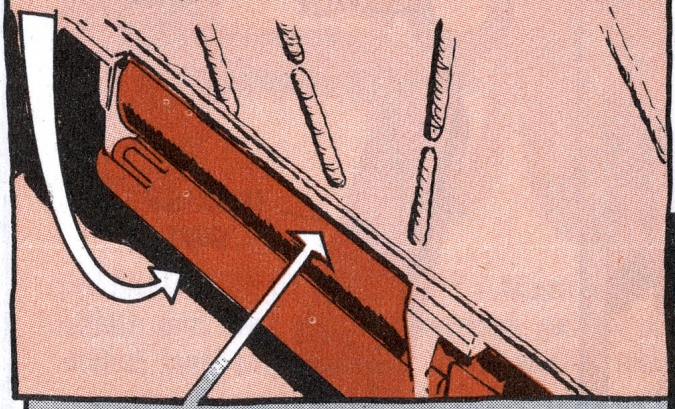
MORE



PISTON RODS (RECOIL AND COUNTERRECOIL)—Dirty, dusty; oil leaks around the stuffing box at rear of cylinder; piston rod end nuts loose, damaged; cotter pins missing, worn.

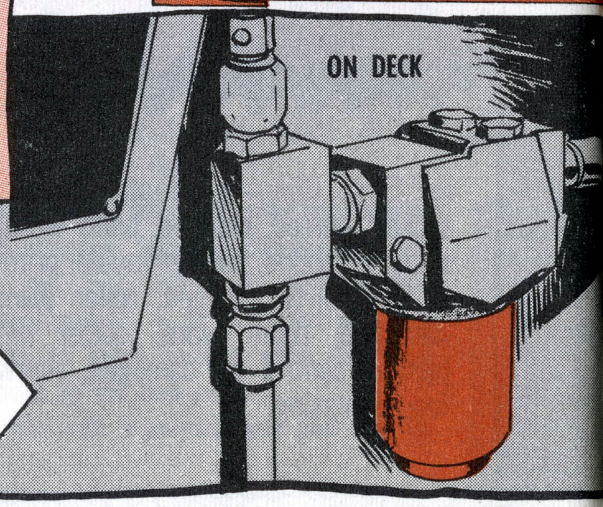
ACCUMULATOR—Nitrogen pressure low; pressure control valve on the bum.

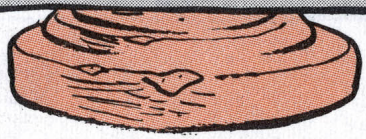
(If the electric pump runs steadily during firing operations or comes on every time somebody touches a hydraulic control, it means either the nitrogen pressure in the accumulator is low or the pressure control valve mounted beneath the deck is defective. You mechanics can replace the control switch, but if the nitrogen pressure's low, support'll have to take over.)



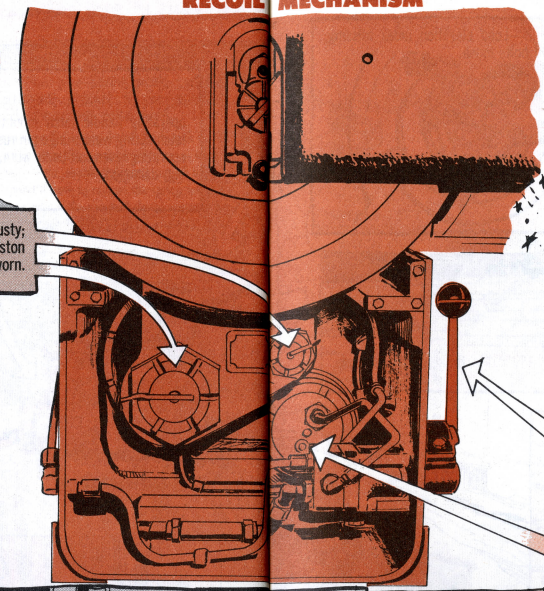
RESERVOIR—Oil level low; bayonet gage missing, broken; filters dirty, need replacing; reservoir breather cap dirty, broken, screws damaged.

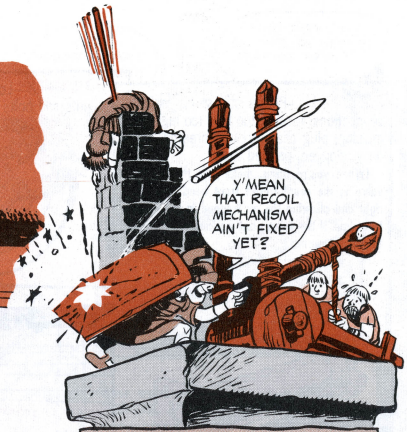
(There're two filters to check on the main hydraulic system — one on the deck, the other in the turret well. Be sure you check both.)





RECOIL MECHANISM





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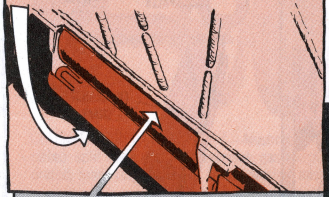

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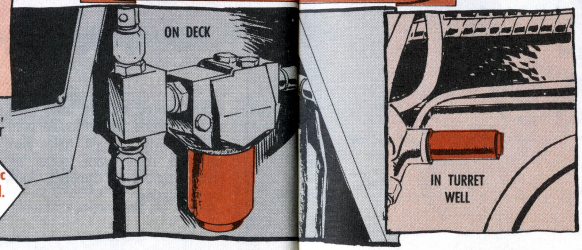


RETRACTION SYSTEM—Valve won't work when handle's moved; won't hold cannon in traveling or firing position: leaks around valve and connections; hydraulic lines bent, loose; retraction handle bent, knob busted.

(Never operate the retracting control handle unless the travel lock's engaged in the traveling position.)

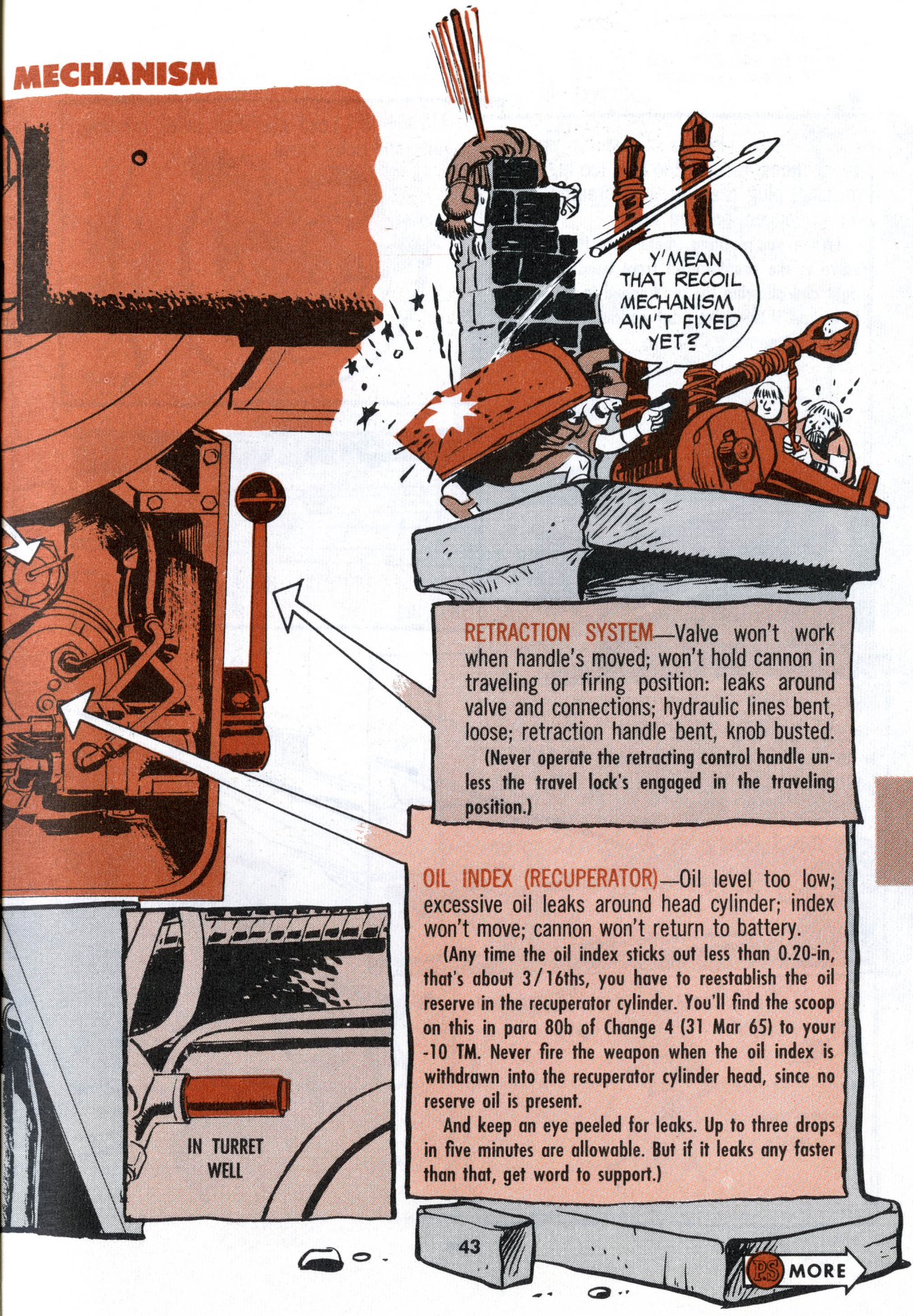
OIL INDEX (RECUPERATOR)—Oil level too low; excessive oil leaks around head cylinder; index won't move; cannon won't return to battery.

(Any time the oil index sticks out less than 0.20-in, that's about 3/16ths, you have to reestablish the oil reserve in the recuperator cylinder. You'll find the scoop on this in para 80b of Change 4 (31 Mar 65) to your -10 TM. Never fire the weapon when the oil index is withdrawn into the recuperator cylinder head, since no reserve oil is present.

And keep an eye peeled for leaks. Up to three drops in five minutes are allowable. But if it leaks any faster than that, get word to support.)

MORE

MECHANISM



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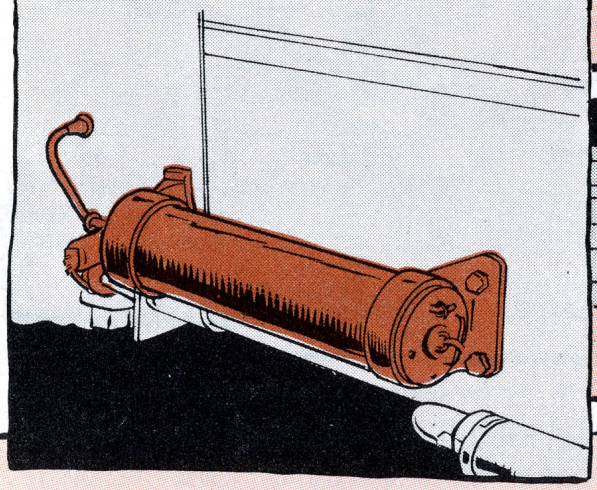
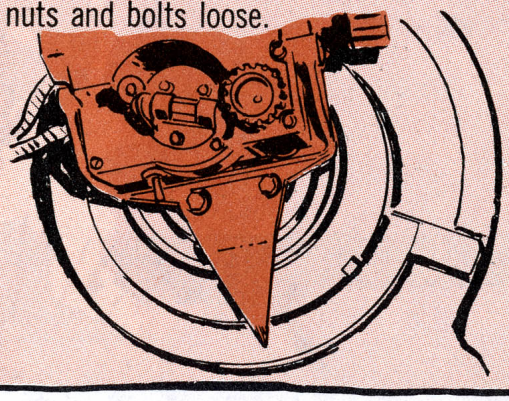
P.S. MORE

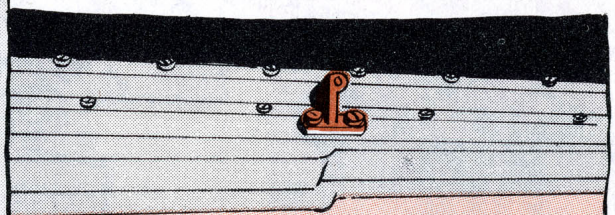
REPLENISHER—Piston sticks; oil leaks at connections; reserve too low; too high; plug missing; plug chain broken; breather holes dirty, clogged, painted over.

(When you're firing, make sure the air check valve in the counterrecoil front head is working right and allowing the air trapped in the cylinder to escape. If the valve's not working, get the word to support pronto.)



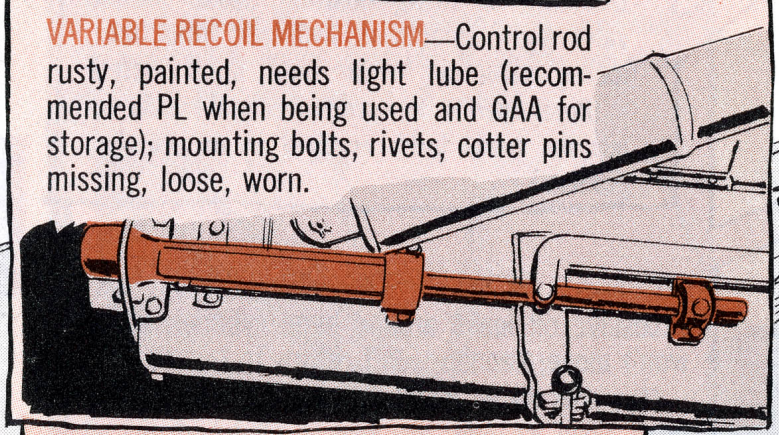
TRUNNION—Load elevation index missing; nuts and bolts loose.

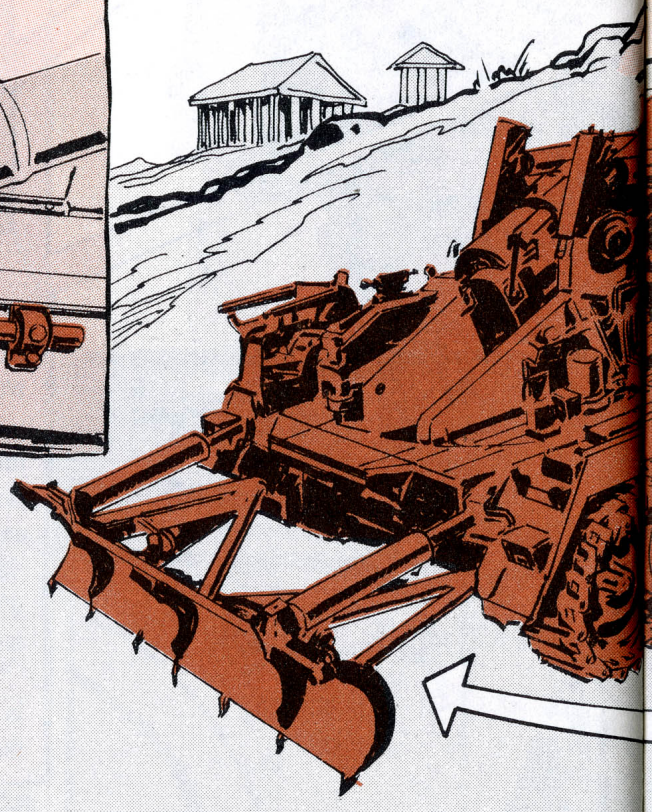




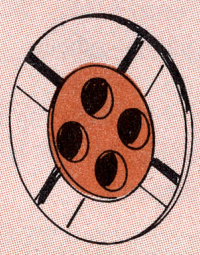
RECOIL INDICATOR—Broken; screws loose, missing.

VARIABLE RECOIL MECHANISM—Control rod rusty, painted, needs light lube (recommended PL when being used and GAA for storage); mounting bolts, rivets, cotter pins missing, loose, worn.





RESPIRATOR—Breather holes (4) painted over, plugged.



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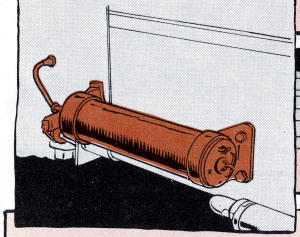

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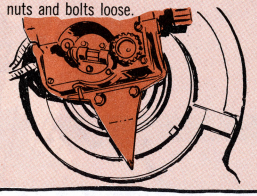

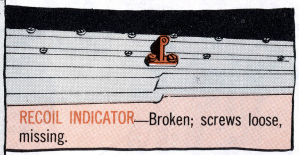

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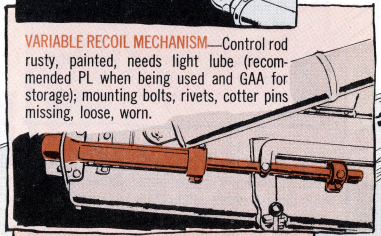
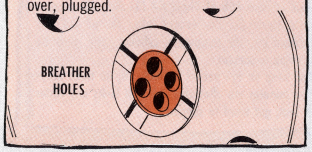
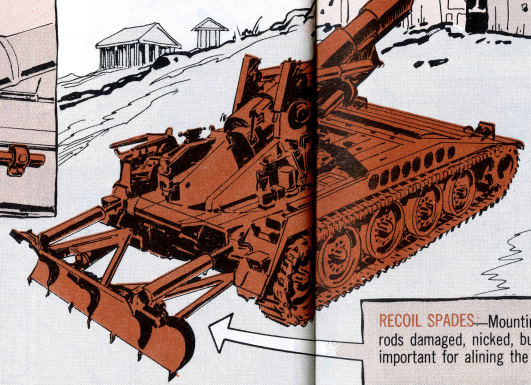
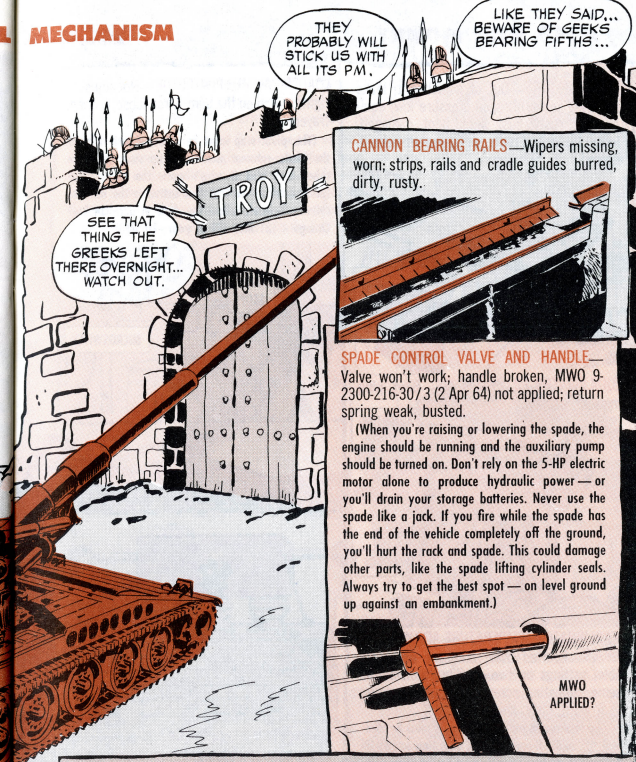


RESPIRATOR—Breather holes (4) painted over, plugged.







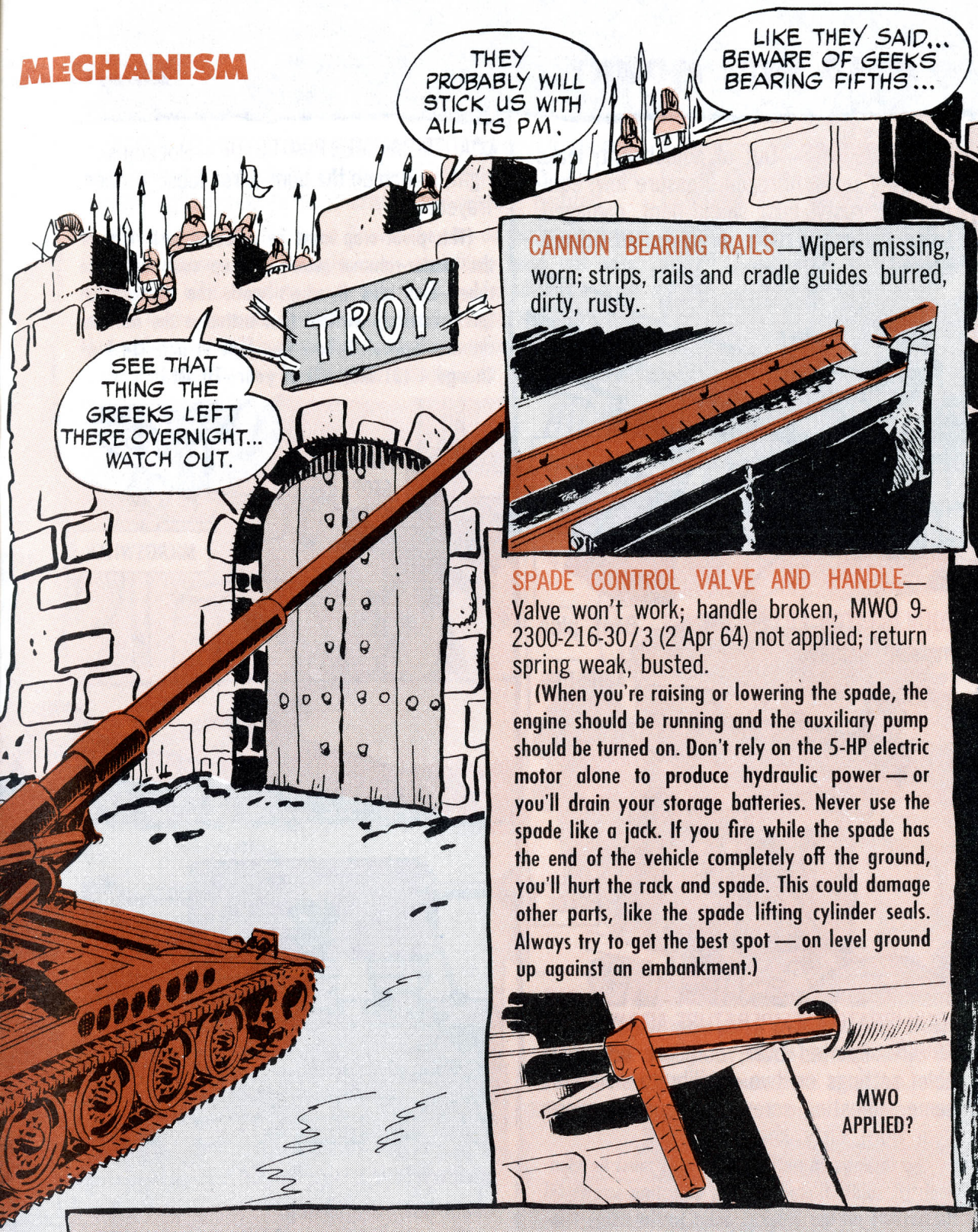
CANNON BEARING RAILS—Wipers missing, worn; strips, rails and cradle guides burred, dirty, rusty.

SPADE CONTROL VALVE AND HANDLE—Valve won't work; handle broken, MWO 9-2300-216-30/3 (2 Apr 64) not applied; return spring weak, busted.

(When you're raising or lowering the spade, the engine should be running and the auxiliary pump should be turned on. Don't rely on the 5-HP electric motor alone to produce hydraulic power — or you'll drain your storage batteries. Never use the spade like a jack. If you fire while the spade has the end of the vehicle completely off the ground, you'll hurt the rack and spade. This could damage other parts, like the spade lifting cylinder seals. Always try to get the best spot — on level ground up against an embankment.)

RECOIL SPADES—Mounting brackets broken; bolts busted, missing; cylinders leak; piston rods damaged, nicked, burred, rusty; spade cylinder stops broken (these stops are very important for alining the lock); flexible lines damaged, frayed, leak.

DA PAM MORE



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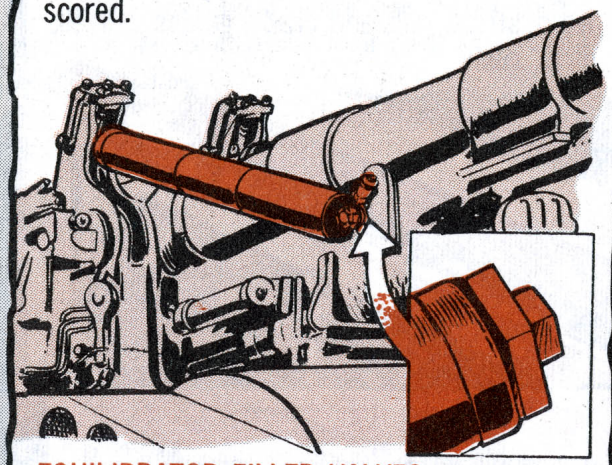
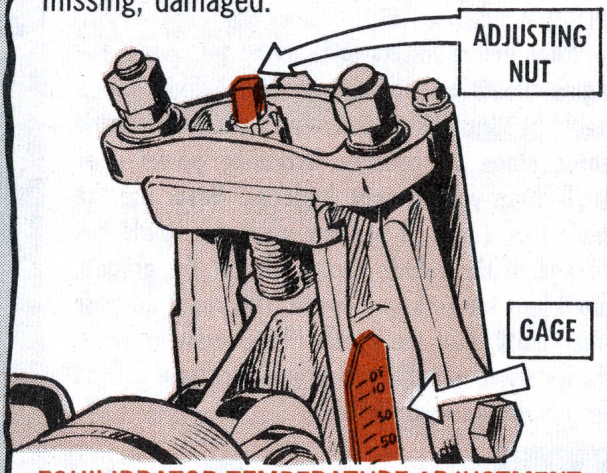
PS MORE

EQUILIBRATORS—Out of adjustment; leaks at O-ring seals; nitrogen pressure low; equilibrators rusty; dust shield bent, damaged, loose; piston rod rusty, dirty, dented, burred, scored.



EQUILIBRATOR FILLER VALVES—Bent, plug missing, damaged.

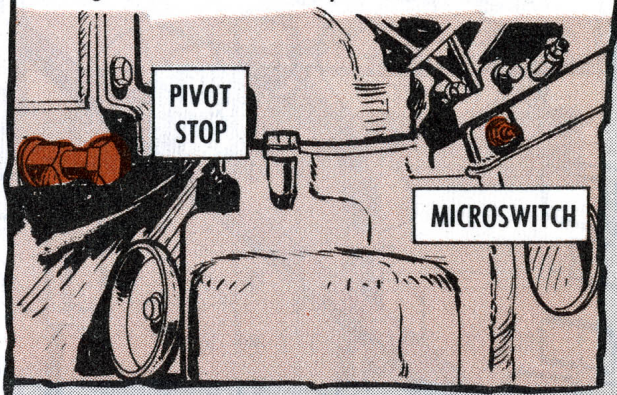


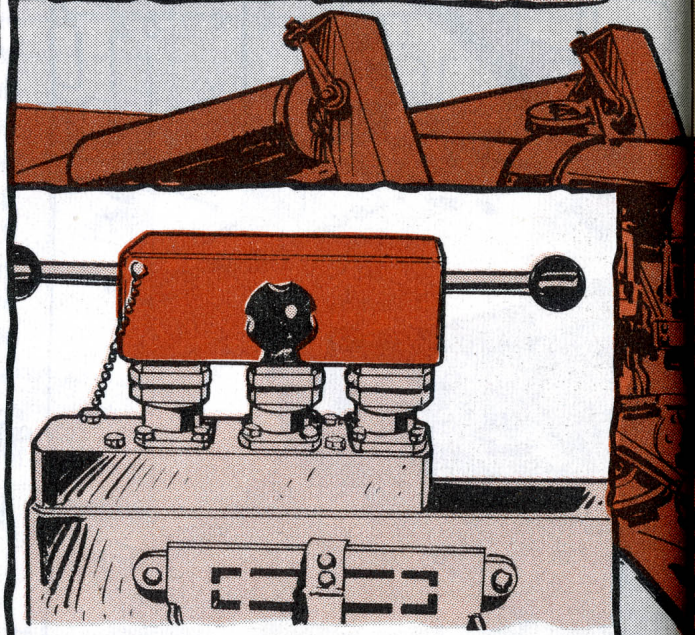
EQUILIBRATOR TEMPERATURE ADJUSTMENT GAGES—Painted over; numbers not readable; settings on two equilibrators not the same; adjusting screw nut rounded; worm gear worn, dirty, chipped.

(The settings on both equilibrators must be identical. To adjust them, turn the adjusting screws till the arrows on the indexes point to the same temperature on the scale. Of course, when you're adjusting temperature scales the equilibrators should be fully extended, that is, with the weapon in fully depressed position on the stops.)

LOADER-RAMMER PIVOT STOP—Not adjusted right; switch on the bum; wires loose, broken, frayed.

(This pivot stop must be adjusted just right or the loader-rammer won't line up snug with the tube—and also it won't work the microswitch (pivot interlock switch) that activates the rammer cylinder control. Follow the dope in para 34.1 of Change 4 (31 Mar 65) of your -10 TM.)

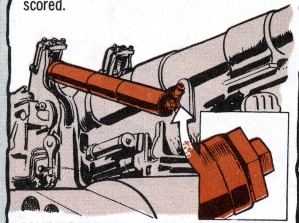




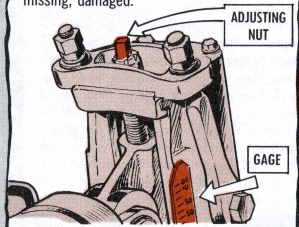
MANIFOLD CONTROL VALVE—Cover missing; chain busted, missing.

(Keep this cover over the controls when you're not using the rammer-loader. Otherwise, somebody's bound to bump 'em or piddle with 'em—and get hurt.)

EQUILIBRATORS—Out of adjustment; leaks at O-ring seals; nitrogen pressure low; equilibrators rusty; dust shield bent, damaged, loose; piston rod rusty, dirty, dented, burred, scored.



EQUILIBRATOR FILLER VALVES—Bent, plug missing, damaged.



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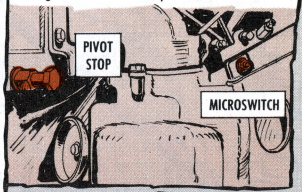
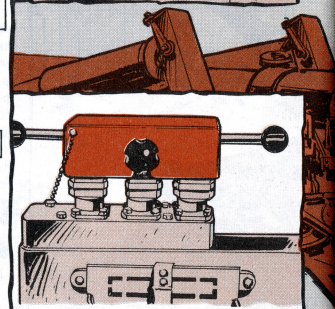


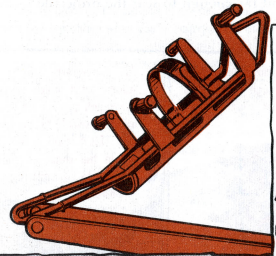


MANIFOLD CONTROL VALVE—Cover missing; chain busted, missing.

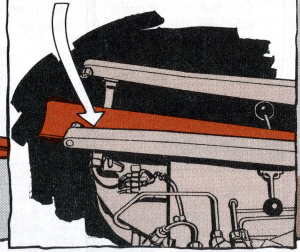
(Keep this cover over the controls when you're not using the rammer-loader. Otherwise, somebody's bound to bump 'em or piddle with 'em—and get hurt.)

LOADING TRAYS—Arms bent, warped, improperly spaced; projectile band broken; catch bent—won't hold; tray not seated right inside rammer arms; tray surface painted.

(The hooks on the tray must fit over the pins on the loader arms. They sometimes bend straight out—and they bend real easy. If the back of the loading tray's bent back too far so that it drags on the loader-rammer, it could dump the projectile. And if it's bent forward too far, it'll get mixed up with the headlink. The tray must hang down as low as you can get it with the four handles.)

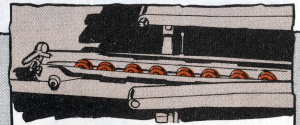


TROUGH—Bearing surface painted; trough warped, dented; out of adjustment. (Change 4 to your -10 TM has the scoop on adjusting.)



RAMMER CHAIN—Out of time or adjustment.

(PS 153 has some scoop on establishing or correcting the timing. On the M107 especially, it's important to get maximum chain extension.)



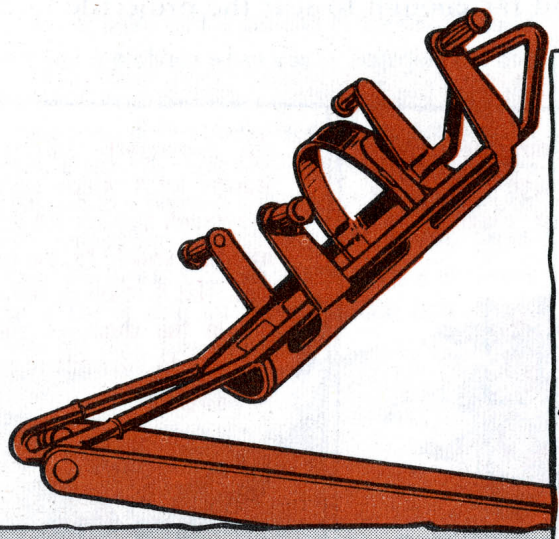
RAMMER IDLER ROLLERS—Bent, not snug on rack.

PS MORE

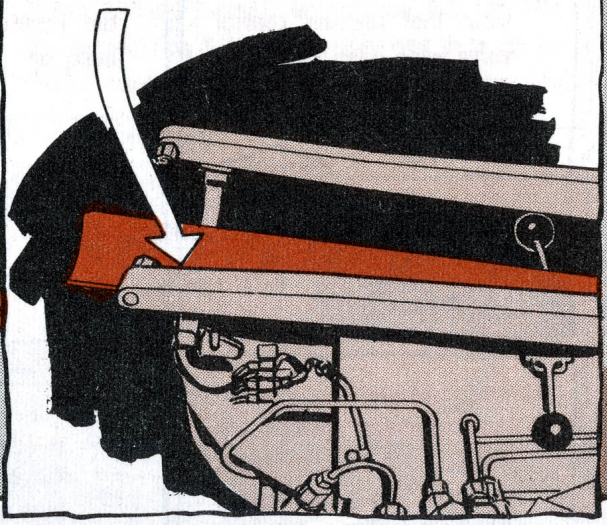
RAMMER

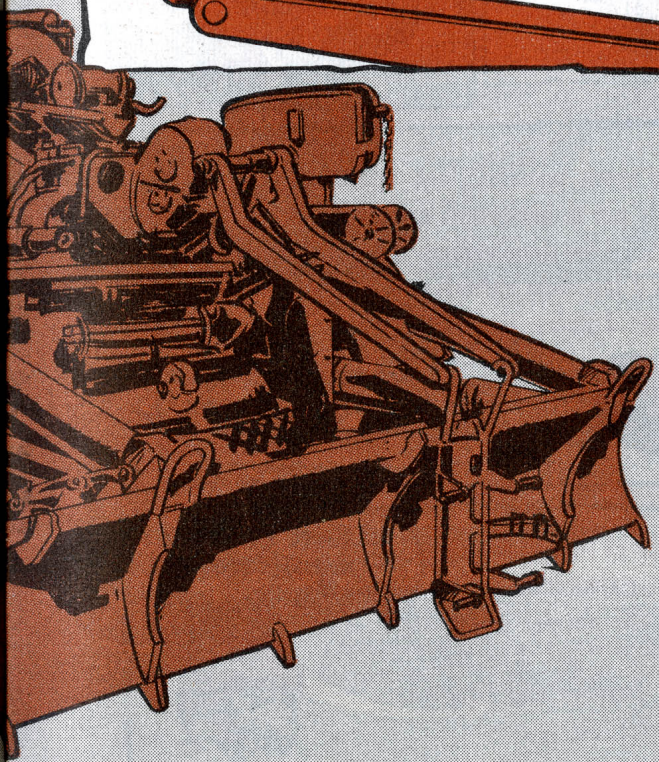
LOADING TRAYS—Arms bent, warped, improperly spaced; projectile band broken; catch bent—won't hold; tray not seated right inside rammer arms; tray surface painted.

(The hooks on the tray must fit over the pins on the loader arms. They sometimes bend straight out — and they bend real easy. If the back of the loading tray's bent back too far so that it drags on the loader-rammer, it could dump the projectile. And if it's bent forward too far, it'll get mixed up with the headlink. The tray must hang down as low as you can get it with the four handles.)



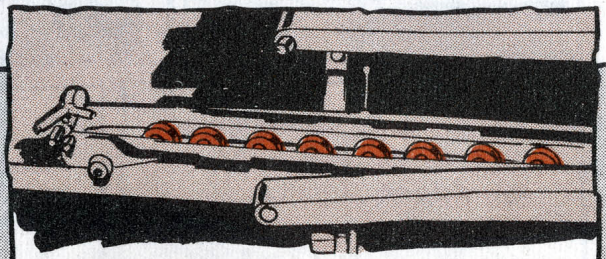
TROUGH—Bearing surface painted; trough warped, dented; out of adjustment. (Change 4 to your -10 TM has the scoop on adjusting.)





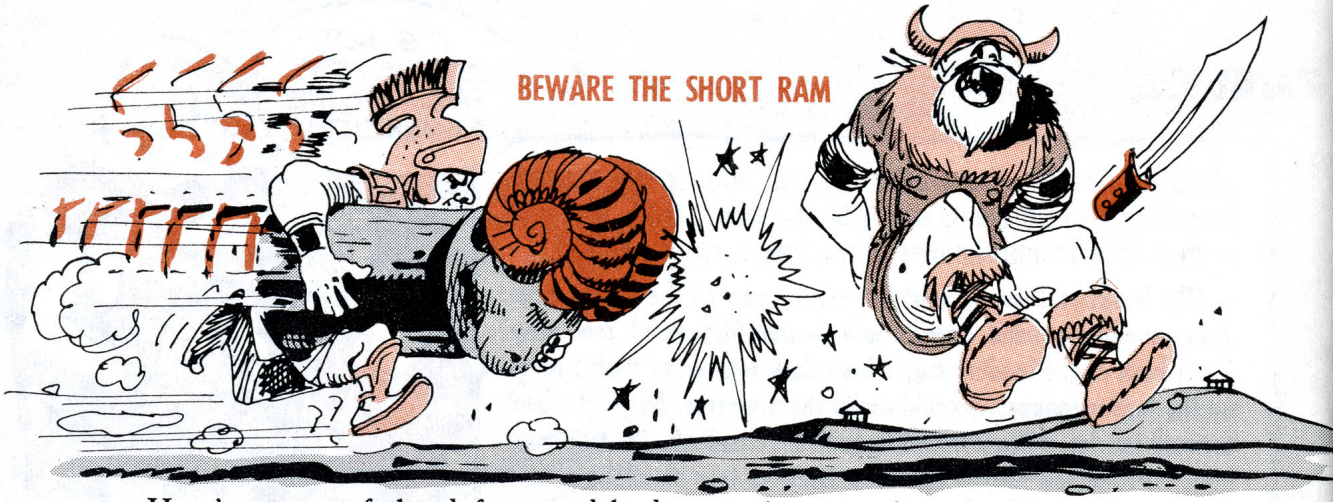
RAMMER CHAIN—Out of time or adjustment.

(PS 153 has some scoop on establishing or correcting the timing. On the M107 especially, it's important to get maximum chain extension.)



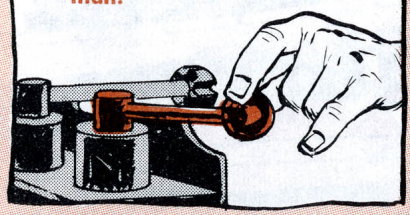
RAMMER IDLER ROLLERS—Bent, not snug on rack.

PS MORE

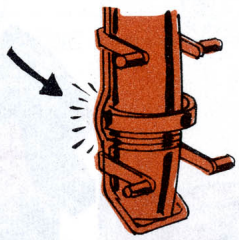


Here're some of the defects and bad operation practices that'll cause a short ram — meaning the chain won't extend far enough to seat the projectile in the 175-mm or 8-incher's tube:

1. Easing the valve handle or creeping or feathering. You want that rammer control valve wide open (full ram) throughout the entire ram, man.

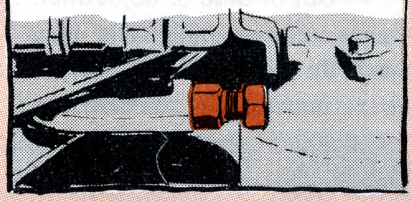


2. A bent or misalined loader tray or trough that causes the rammer chain to get hung up.

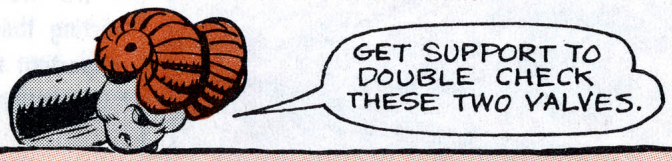


3. An improperly adjusted trough latch which causes the trough microswitch (tray interlock switch) to lose contact. This'll result in fluttering in the chain—a short ram due to intermittent loss of power.

4. An improperly adjusted loader-rammer pivot stop which also causes the microswitch to lose contact and a fluttering in the chain.

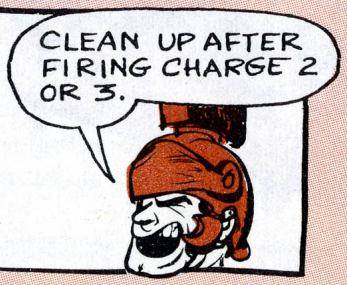


5. A rammer check valve or flow regulator metering valve that's put in backwards could also give you a bum ram. So, if the chain extends fast and comes back slow — or if the chain extends one distance one time and another distance the next time —

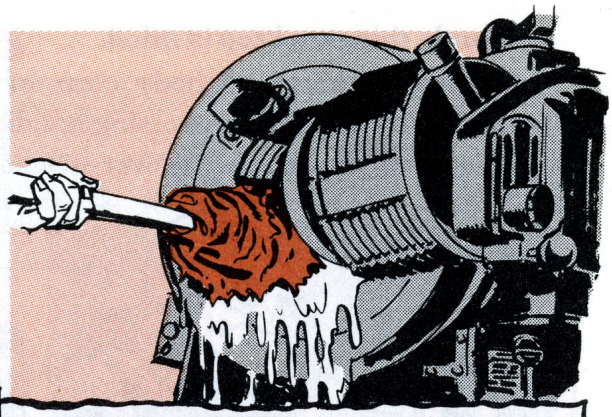


6. A bent or sprung rammer rack roller that'll let the rammer rack climb over the teeth of the rammer gear. This'll result in loss of power and a short round. And it'll mean you'll have to retime the rammer chain.

7. A buildup of stringy residue from the polyurethane tube used in the powder charge for charge 2 and 3 in the powder chamber and especially in the forcing cone.

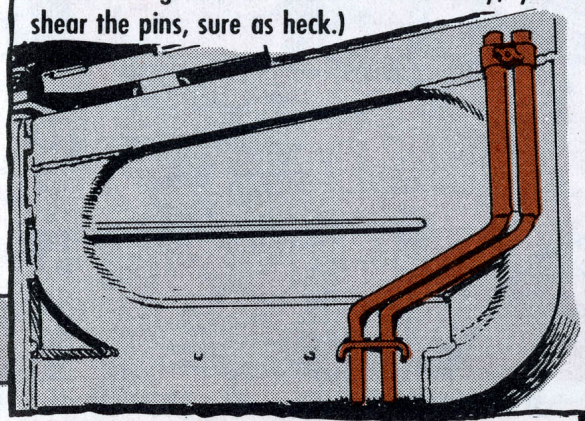


It's real important that you crewmen on the M107 especially give the powder chamber a real good swabbing after firing **every round.** Use cold water and plenty of muscle. Besides cleaning the chamber, the cold water'll cool it off and prevent a hot round. You should also swab the mushroom head of the obturator to cool that off.



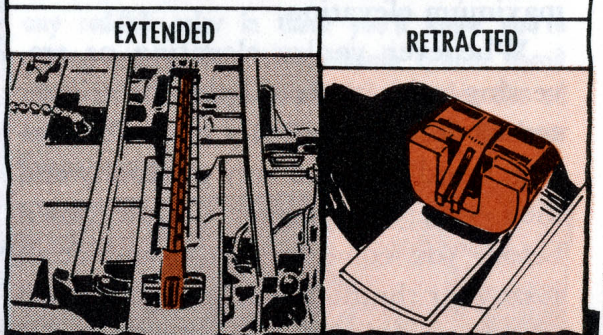
HANDCRANKS—Cranks bent, pins broken or missing.

(Dirt or paint on the pin-end of the handle could give you a problem when you're engaging the dog clutch. Some guys take the paint off and keep the handle end lightly lubed—and the inspectors don't seem to mind. It's lots better than trying to get the crank out in a hurry in a critical situation, that's for sure. Remember, it's the right crank that disengages the power train when you push it in. If you use a strong arm on the left crank only, you'll shear the pins, sure as heck.)



HEADLINK AND RAMMER CHAIN—Bumper missing, worn, loose; satety latch broken; rammer chain links and pins badly worn, resulting in rammer chain buckling; link pin cotter pins missing or broken.

SAFETY NOTE: Make sure the rammer's back in the stowed position and smack up against the stop (listen for the thump!) before you fire off. Else, the breech ring'll hit the loader and tear up the works—and maybe a couple of your buddies, too!

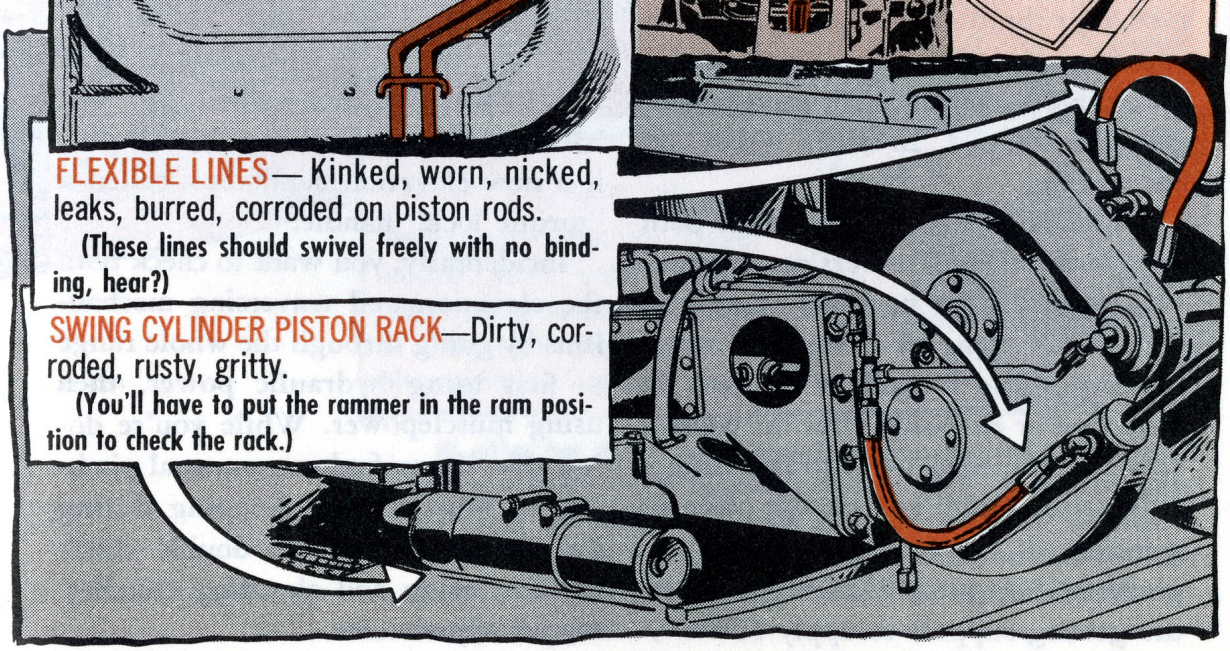


FLEXIBLE LINES—Kinked, worn, nicked, leaks, burred, corroded on piston rods.

(These lines should swivel freely with no binding, hear?)

SWING CYLINDER PISTON RACK—Dirty, corroded, rusty, gritty.

(You'll have to put the rammer in the ram position to check the rack.)



P.S MORE

ELEVATING AND

Coupla things to keep in mind.

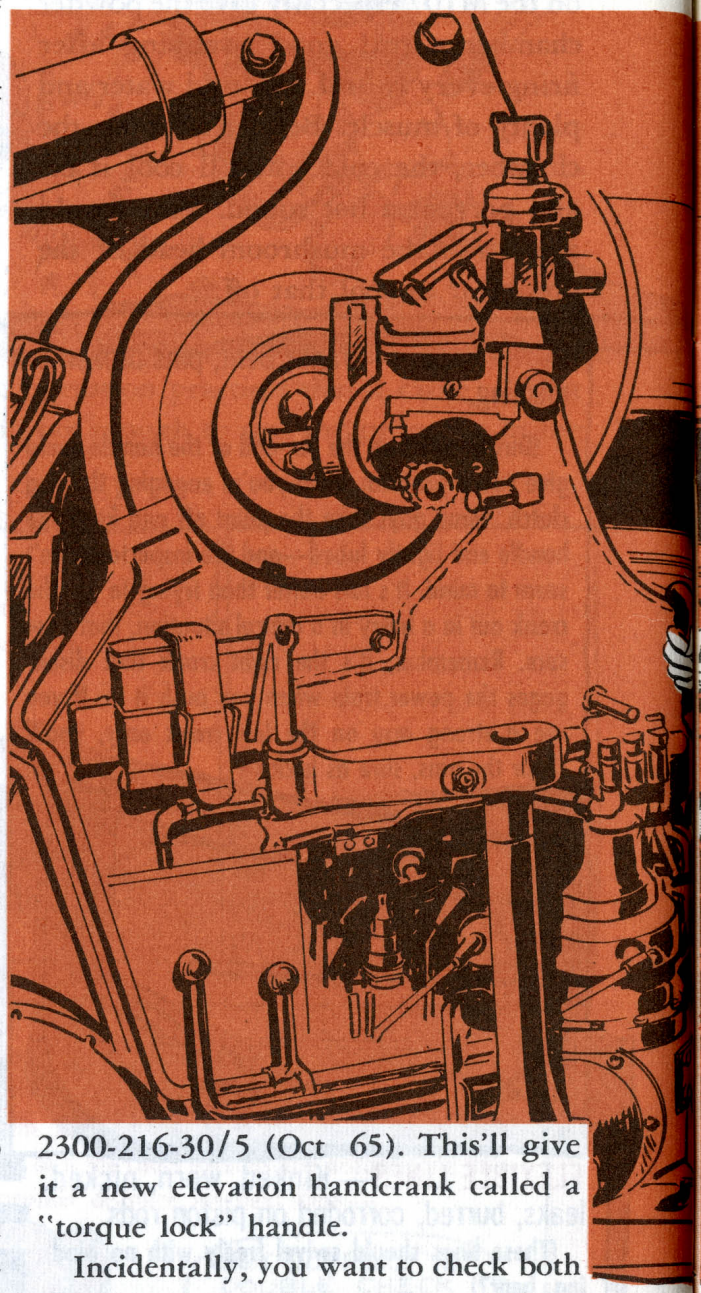
Keep your legs and body clear of both the elevating and traversing handcranks when you're using power — just in case.

Also, keep the traversing handcrank in a safe spot while you're exercising the elevation mechanism. If you leave the handcrank lined up with the M115 panoramic telescope, say, both the elbow of the scope and the M137 scope mount will get banged up when the tube nears maximum elevation.

Whenever you're elevating or traversing with power, hold the trigger switch down and **gently** move the control. Build up speed very gradually and then — very important — slow down before you come to a stop and don't take your thumb off the trigger switch (the micro-switch on the control handle) till elevation, depression or traverse motion has stopped. In other words, no hot-rodding.

You'd be smart, too, to check both the elevation and traversing mechanisms regularly for backlash. You'll be able to tell right off if the brakes are defective: The weapon will creep in deflection or elevation after the control valves're returned to neutral position.

If you run into any handle creep or spinning of the handcrank when the power's being used, don't waste a minute getting support to apply MWO 9-2300-216-30/5 (Oct 65). This'll give it a new elevation handcrank called a "torque lock" handle.



Incidentally, you want to check both the elevation and traversing mechanisms by going through the whole range — first using hydraulic power, then using musclepower. While you're doing this, if you find any unusual pitching or bouncing (or hopping during firing), get support to double check the traversing and elevating clutches' torque adjustments.

ELEVATING AND TRAVERSING MECHANISMS

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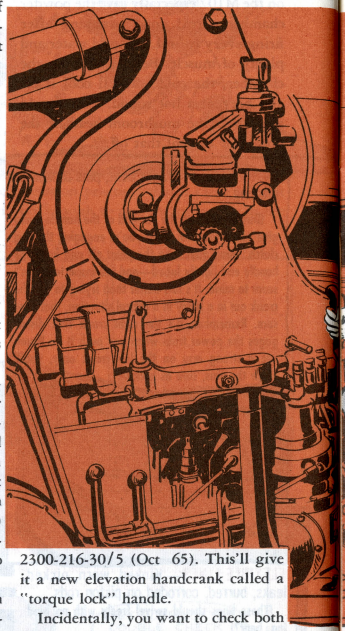

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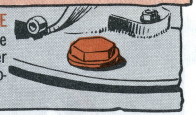
ELEVATING GEAR ARC—Gears chipped, worn, rusty, blocked up with brush.

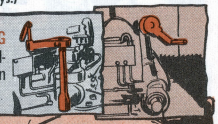
ELEVATING FINAL DRIVE—Oil level low (should be level with bottom of filler hole); wrong lube; seepage.

TRAVERSE FINAL DRIVE—Oil level off (should be 3½-in from top of filler hole); wrong lube; seepage.

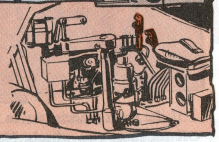


(Like your LO says, both of these final drive assemblies should be checked weekly. They get OES only. OES has a neutral color, so if you notice any reddish color in there you'll know you're getting seepage from the hydraulic system. Recoil oil is red. This seepage will tell you that the oil seal in the case is shot—another job for your Support guys.)

ELEVATION AND TRAVERSING MECHANISM (MANUAL)—Handcranks damaged, don't turn smoothly.



ELEVATION AND TRAVERSING CONTROLS (POWER)—Controls defective; solenoid trigger switch won't work; solenoid valve sticky (if you don't hear a click, either the button or the solenoid's kaput).



(If either one of the power operations gives you jerky elevation or traverse, doublecheck the hydraulic system for oil line or connector leaks or damage, and check the oil index in the recuperator for low level. If these check out OK, it could be the hydraulic motor's on the bum. If the elevation's on the jerky side, doublecheck to see that both equilibrators are adjusted right.)

MORE

TRAVERSING MECHANISMS

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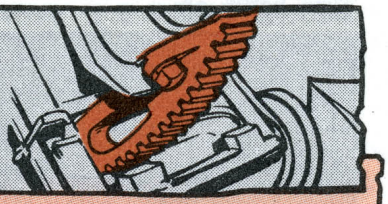

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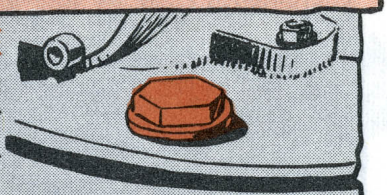

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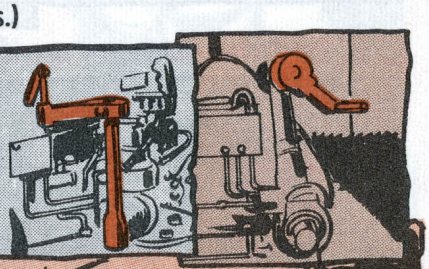

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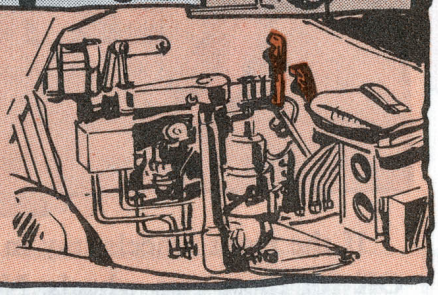

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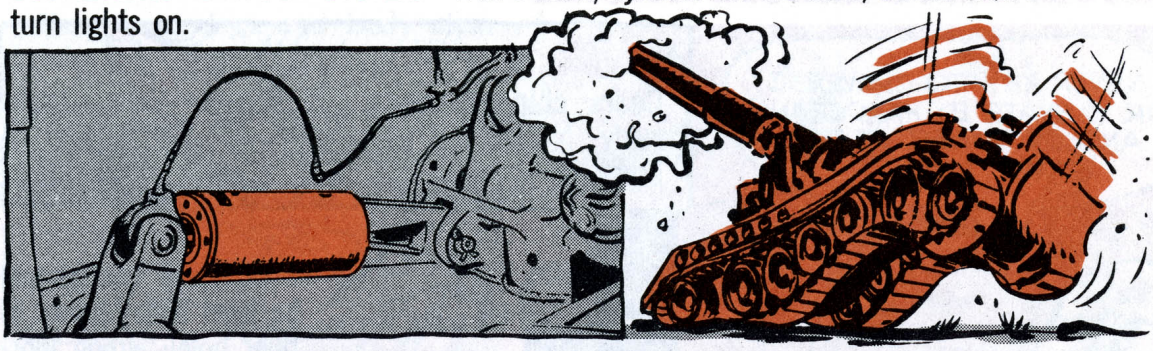
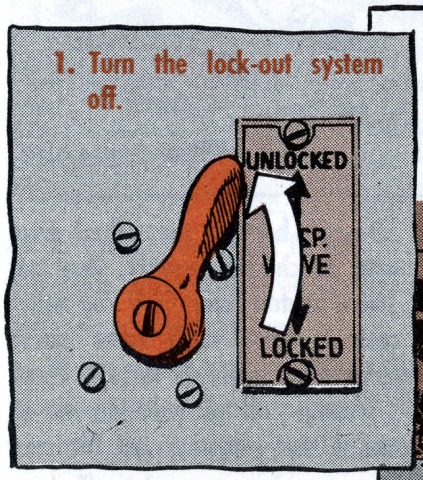
P.S. MORE

SUSPENSION LOCK-OUT SYSTEM—Won't work; cylinder on the bum; switch won't turn lights on.

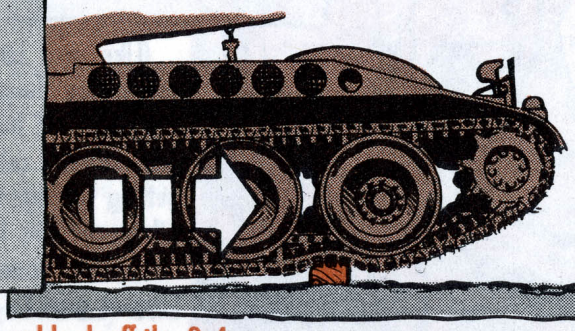


If your weapon kicks like a mule when you're firing, it could mean that the suspension's off or not working. Here's how you can check this out:

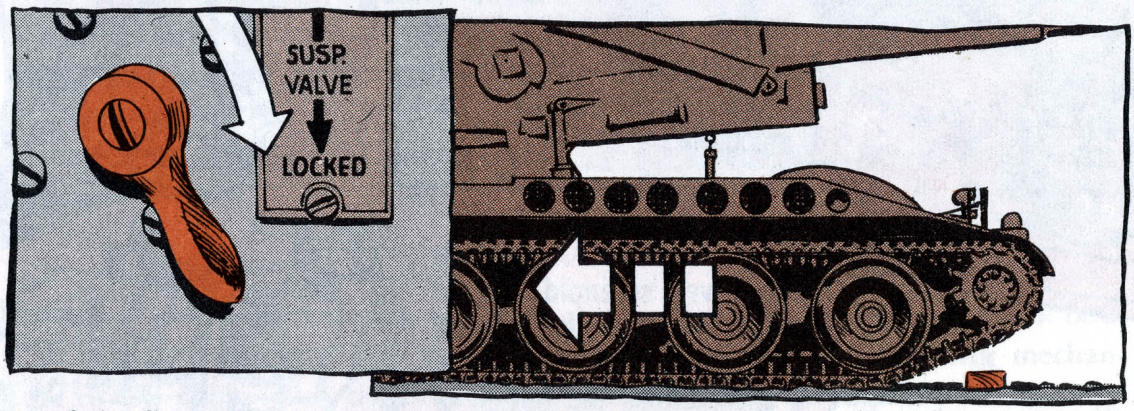
1. Turn the lock-out system off.



2. Drive your vehicle up on a 2x4 so the block raises both front wheels 2 inches off the ground. (If you raise the wheels more than 2 inches, you could damage the seals in the lock-out cylinder when you release the lock-out system.)



3. Put the lock-out system on and back off the 2x4.



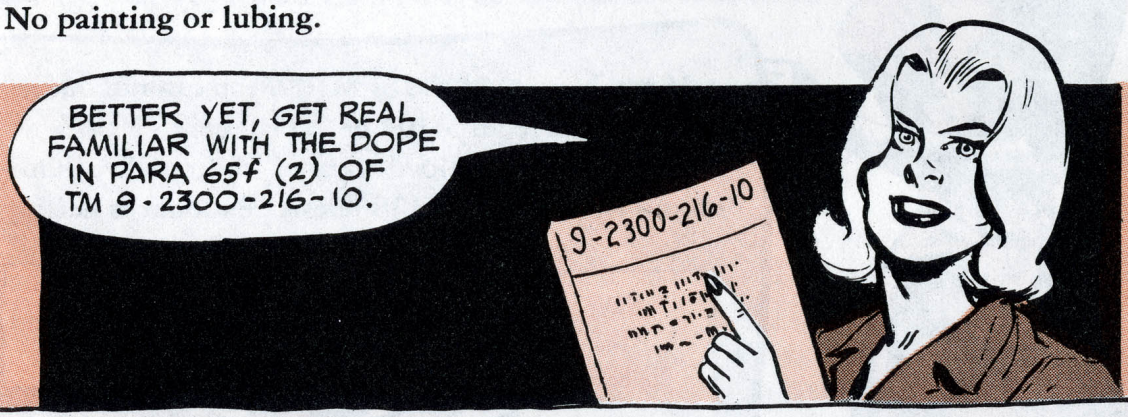
If the front wheels stay in the raised position you know the lock-out system's OK for those two wheels. Now test the next two wheels and the two after that till all eight wheels have been checked out. If any of them fail to check out OK, get your support guys on the job.

O'course, this kicking could also mean the traversing/elevating slip clutch needs adjusting or the equilibrator pressure's wrong, or your spade's not emplaced right. So check 'em all.

SIGHTING AND FIRE CONTROL

No matter how well you maintain your gun or howitzer, it won't be worth a bucket of beans unless you can zero in on your target. So, go heavy on attention to the sighting and fire control equipment. But go real, real light on how you handle 'em. These instruments are delicate.

In general, there're four main things to remember in handling these babies: No rough stuff. Keep 'em covered when not in use. Keep 'em clean and dry. No painting or lubing.



PUBS—Missing, torn, not up-to-date, hard to read, wrong ones.
You should have TM 9-2300-216-10 (28 Jun 62) w/6 Changes; TM 9-2300-216-20 (17 Jun 62) w/Change 3; TM 9-2300-216-20P (17 Jul 62); TM 9-2300-216-ESC/1 (28 May 64) — M110; TM 9-2300-216-ESC/2 (28 May 64) — M107; LO 9-2300-216-12 (19 Aug 65).

RECORDS AND FORMS—Missing, torn, made out wrong, not filled completely according to instructions in TM 38-750 (Jan 64) w/2 Changes.

PARTS AND ACCESSORIES—Missing, dirty, broken. Check what you have against what your TM's say you should have . . . and get those requisitions in pronto.

MWO'S—Missing, not applied; not recorded on DA Form 2408-5 in your log book. (See DA Pam 310-4 for those that apply.)

PS END

M107-M110 RHEOSTAT ROUNDUP

So what's new, pussycat?

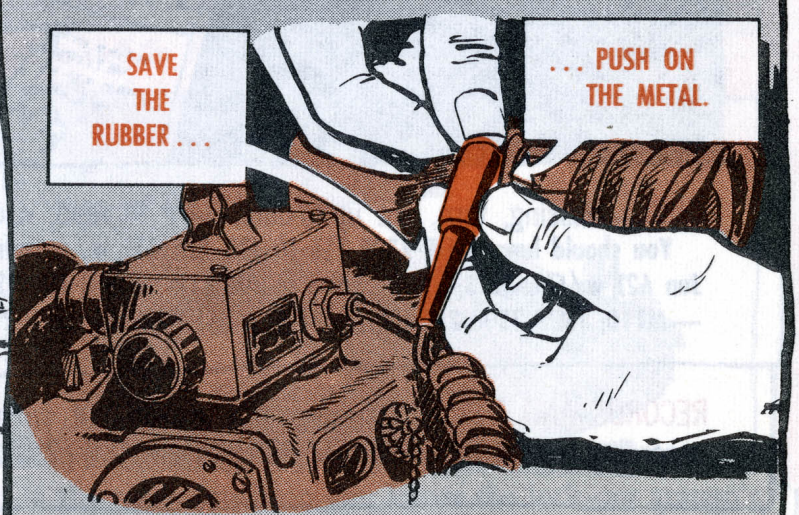
If you've got any of these SP jobs — M107, M108, M109 or M110 — this is new for true-blue you.

The rheostats for some of the fire control instrument lights are going kaput. The way the electrical wizards figure it, the current surge, when you start the vehicle, is ruining rheostats that are left in the ON position.

The cure is simple, make sure that all electrical switches except the ones you need to start the engine are OFF before you start the vehicle.

If you have an M108 or M109, you can fall out . . . but if you have an M107 or M110, here's a tip.

The rubber moulded part of the reticle illuminating light on the M138 telescope mount is getting



cut and torn because some heavy handed types are pulling on it when they disconnect the light from the telescope mount.

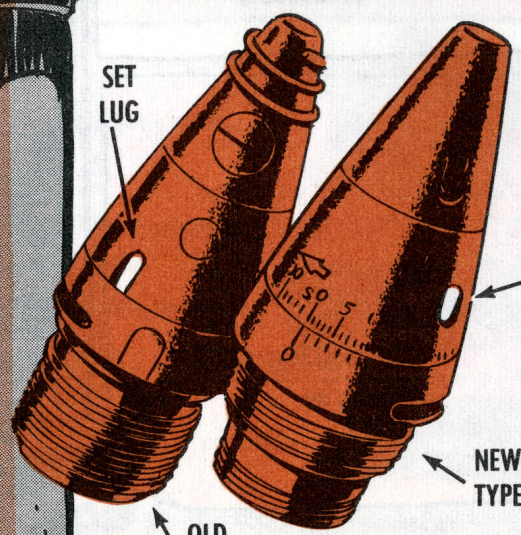
Cure for this is to keep it from happening. Remember it like this — push on the metal and you save the rubber.

Hey, you guys with the new-type mechanical-time fuzes . . . y'know, the kind your OVE fuze setters won't fit 'cause their set lugs are closer to the tip of the fuze than they are on the old type.

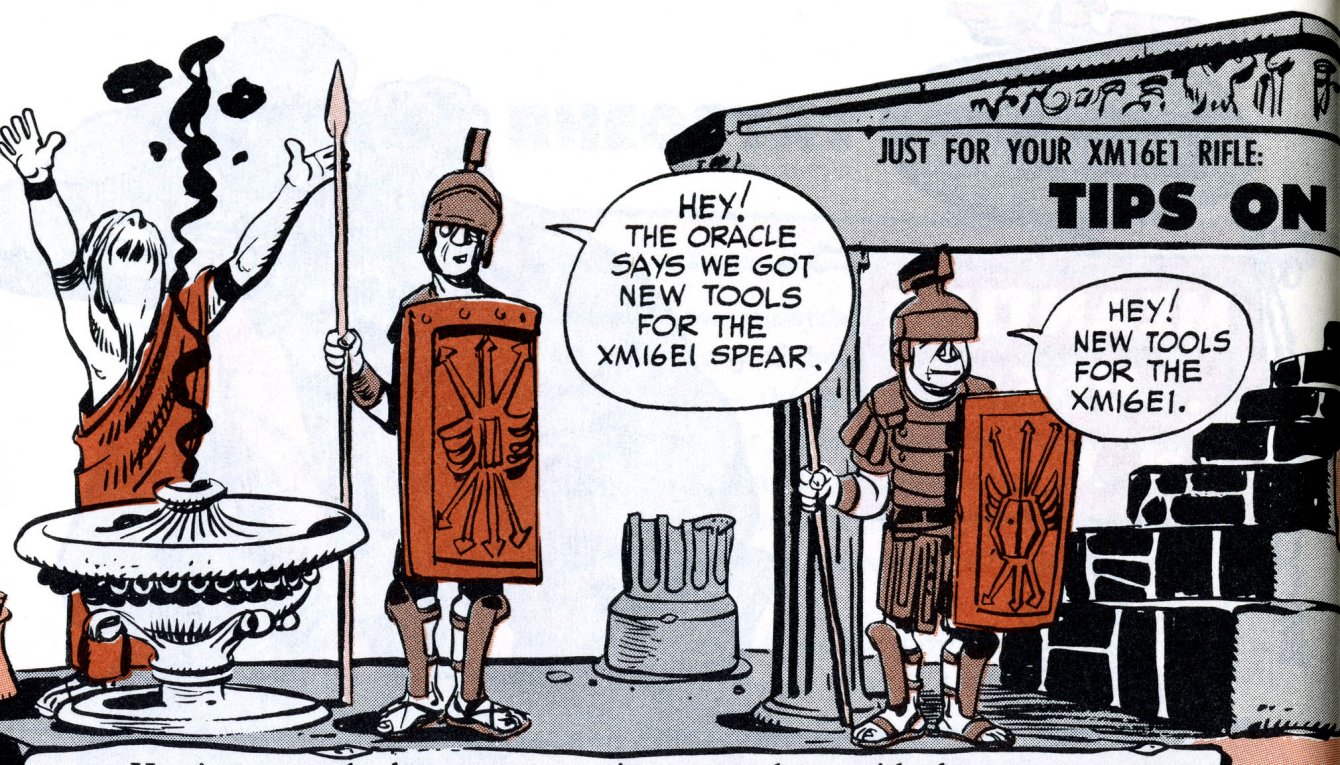
You can get an M63 fuze setter set (FSN 1290-966-9318) through regular supply channels if your outfit's equipped with the M102 105-MM light towed howitzer or the M106 and M106A1 107-MM SP mortar.

Or, if you've got the 105-MM thru 8-in guns and howitzers, or the 4.2-in mortar, you can get a temporary XM34 fuze setter set (FSN 4925-078-4367) till the M63 shows up in your BIIL.

Order this XM34 from Letterkenny Army Depot, Chambersburg, Pennsylvania, using SB 9-223 (23 Feb 66) as your authority. You're entitled to two per weapon.



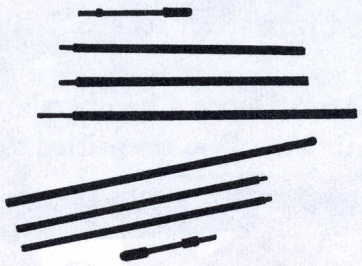
XM34
FUZE SETTER
FSN 4925-078-4367

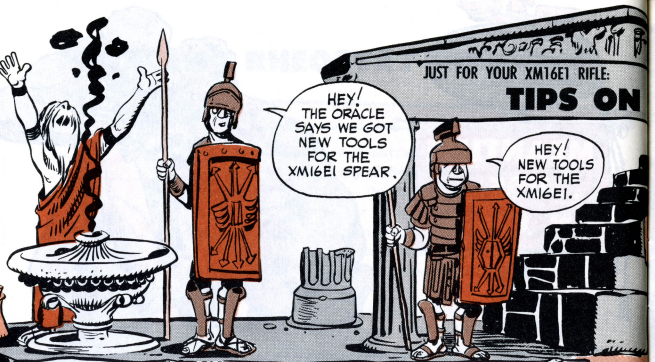


Here're a couple-three generous tips to go along with the new permanent-cleaning tools and accessories you just got — or will soon get — to replace the temporary stuff you've been using up to now on your XM16E1 rifle. This includes the interim cleaning rod.

Take a squint at 'em first.

The items in brown are the new ones.

		INTERIM
Cleaning rod		M11E1 — FSN 1005-903-1295 (11686326) M11 — FSN 1005-070-7812 (11010020)
Bore brush		FSN 1005-903-1296 (11686340) (3¼-in lg)
		FSN 7920-205-2401 (2⅜-in lg)



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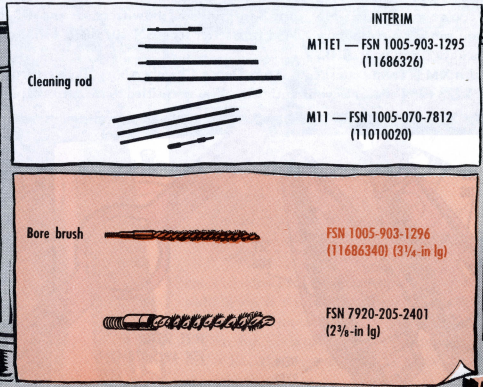
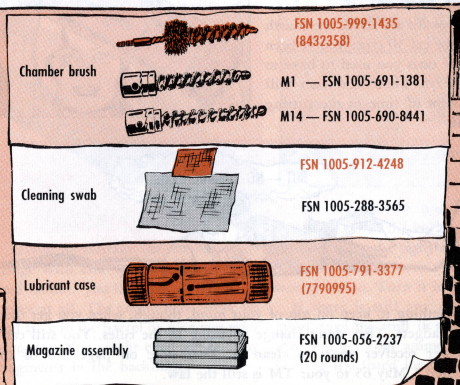


BEWARE: DIFFERENT THREADS

The big difference between all the new tools and all the old ones is in the threads. Yeah. The new ones have finer threads (36 to the inch as compared to 32 per inch for the old).

This means you can't screw sections of the old and interim rod together, and you can't use the new bore brush or the new chamber brush with the old rod or the old brushes with the interim rod. To each his own, like that hit used to moan.

But, if you should happen to get the interim rod before you receive the new bore brush, you could use the interim rod with the old brush — but only to push the brush through the bore. Don't try to screw it on. You do the push job by removing the swab holder and use the lower section of the rod as a guide to shove the brush — a one-way deal with the weapon stripped, o'course. Push the brush all the way through from the muzzle end, and then all the way through from the chamber end.



MORE

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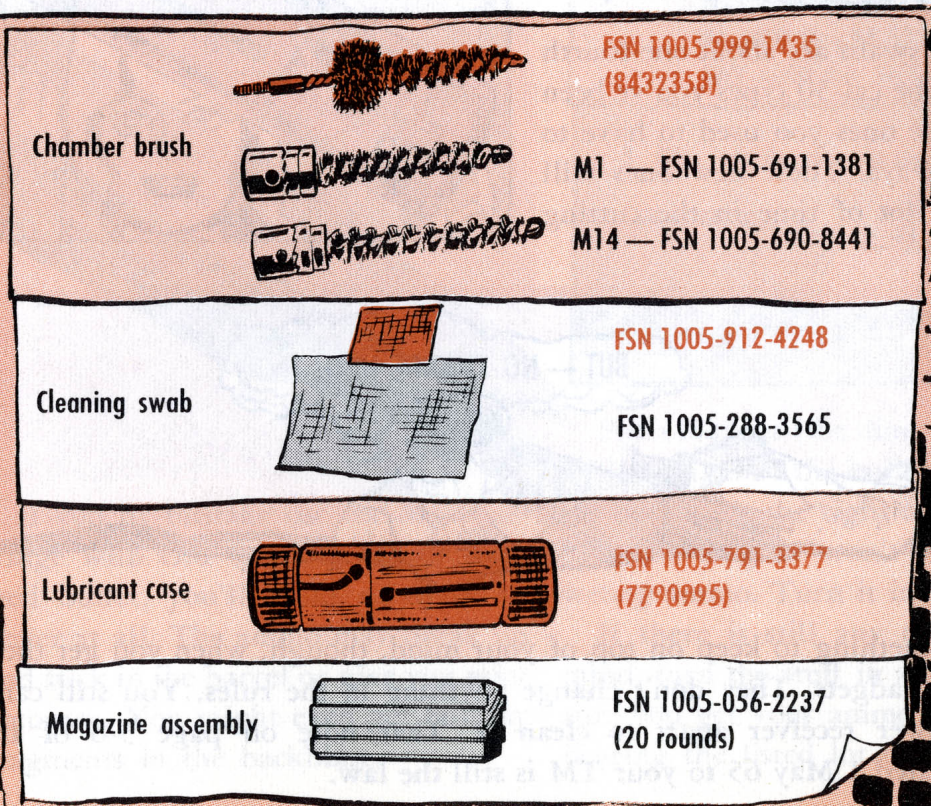
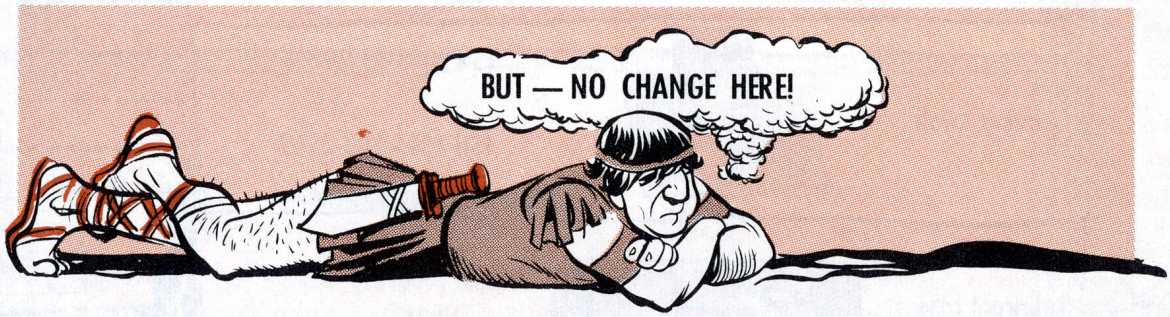


P.S. MORE

Watch this, though! If you get one of the straight-handled "interim" M11E1 cleaning rods (FSN 1005-903-1295) ask your armorer to get the handle bent before you screw the chamber brush into it.

The new swabs are about one-fourth the size of the cal-30 types you've been using — the ones you used to have to slice four ways. These new ones will save you a lot of time in the cutting department.

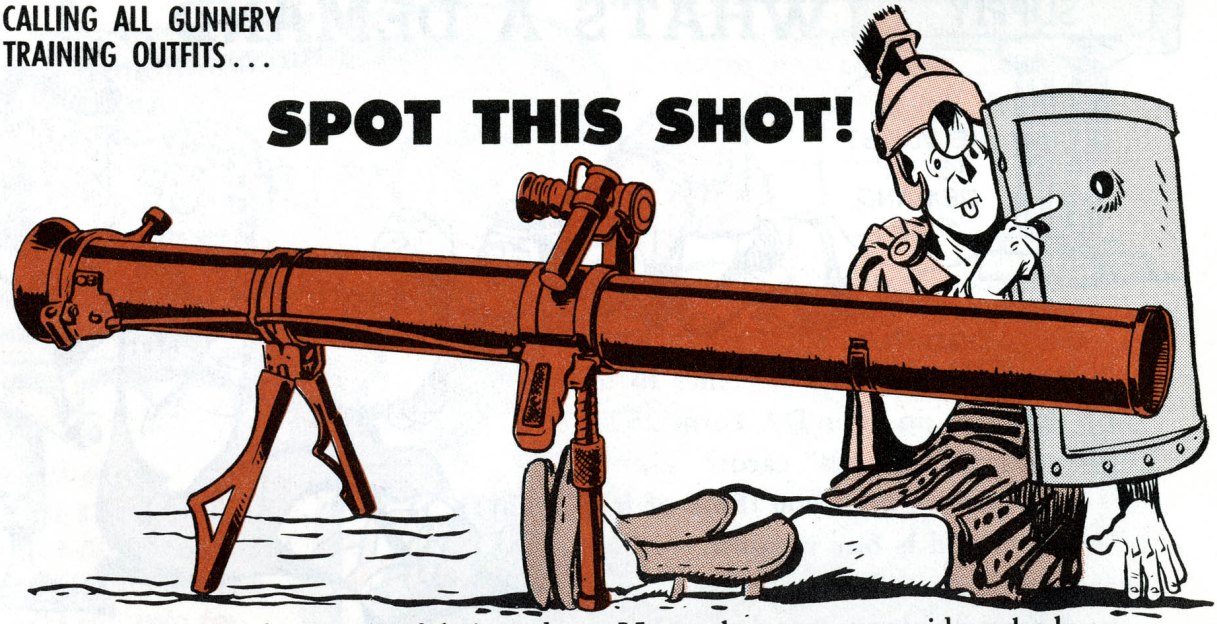
The new double-end lube case (FSN 1005-791-3377), holding PL Special (FSN 9150-273-2389) in one end and rifle grease (FSN 9150-248-3480) in the other, is a real gem. Your armorer can fill both ends for you, and refill, too, when you run low.



Here's something to keep on top of your mind, though, when you get these bright new gadgets. They don't change anything in the rules. You still can't take the lower receiver apart to clean it. That note on page 3-8 of the Change 3 dated 1 May 65 to your TM is still the law.

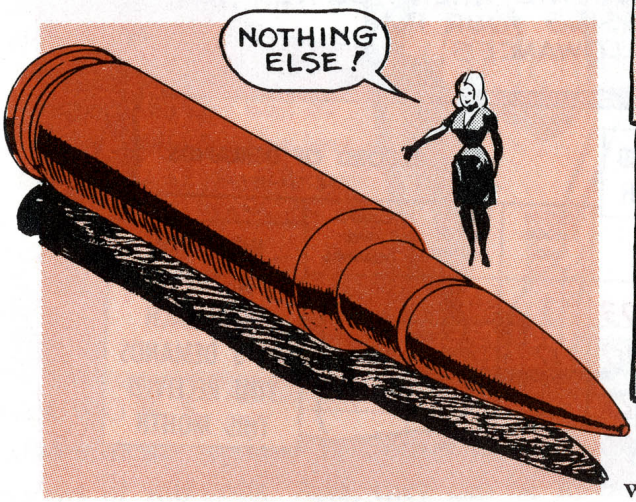
CALLING ALL GUNNERY TRAINING OUTFITS . . .

SPOT THIS SHOT!



If you've got the locally-fabricated M149 subcaliber device (FSN 1005-878-0204) for spouting 7.62-MM tracer bullets from M67 90-MM reckless rifles, be sure you use this ammo:

M62 cartridge with GMCS (gilding metal clad steel) jacket.

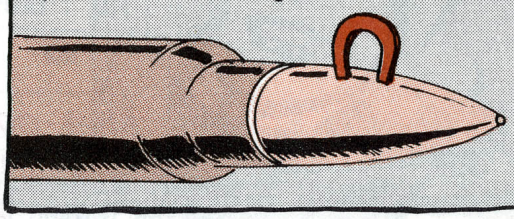


If you by mistake use the M62 cartridge with GM (gilding metal) jacketed bullet, you'll wind up with no tracer at all. The ammo may break up and stick in the barrel or give you poor accuracy. You might even get hurt by fragments in the backblast.

Now, these two cartridges look exactly alike, so you can't tell 'em apart by eyeballing. However, there're two other ways to identify 'em:

1. Check the lot numbers. These are the ONLY lot numbers to use at the present time:
   FA-1 thru FA-81
   LC-12000 thru LC-12303
   RA-5000 thru RA-5224
   WCC-6000 thru WCC-6088

2. Give 'em the magnet test, like so:

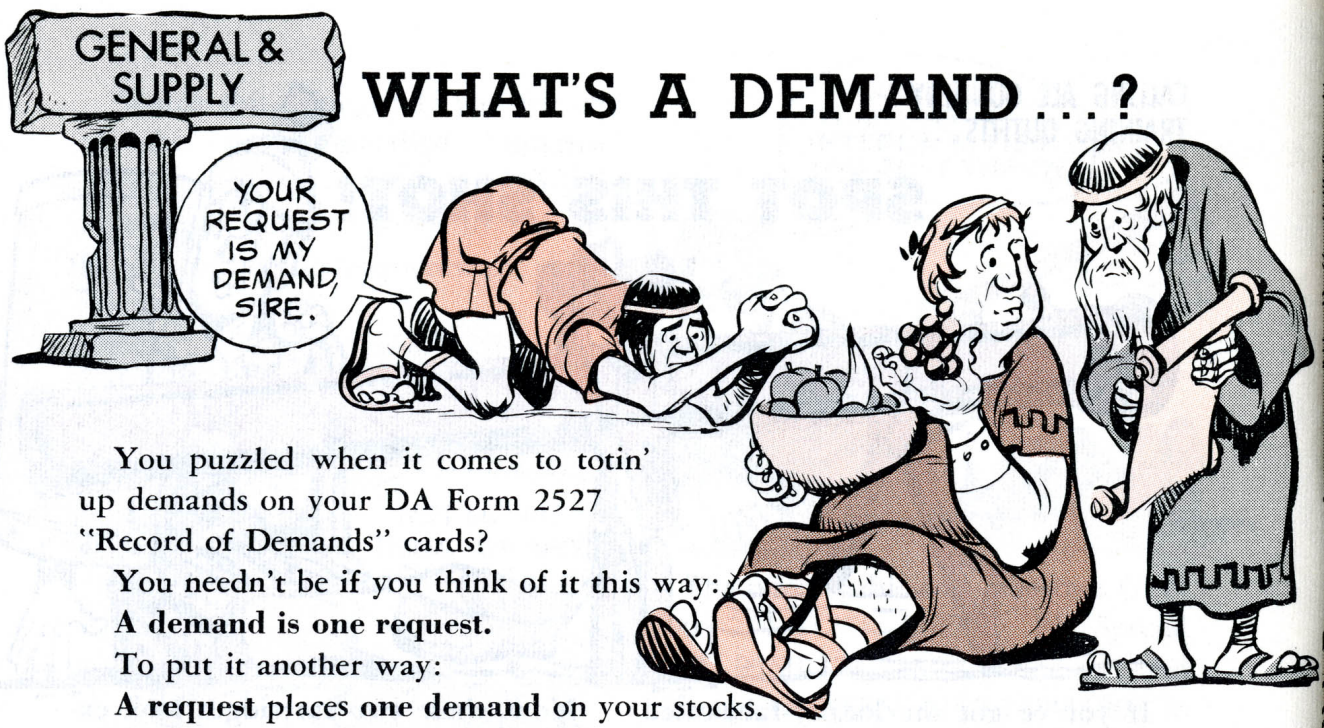


Put a magnet (the dime-store variety will do) against the bullet. If the magnet sticks, it's the right ammo.

If the magnet won't stick, it's the wrong ammo. Turn it in pronto.

If there is still any doubt in your mind, turn the stuff in anyway and be sure you get your ammo from batches bearing the listed lot numbers.

WHAT'S A DEMAND . . . ?



You puzzled when it comes to totin' up demands on your DA Form 2527 "Record of Demands" cards?

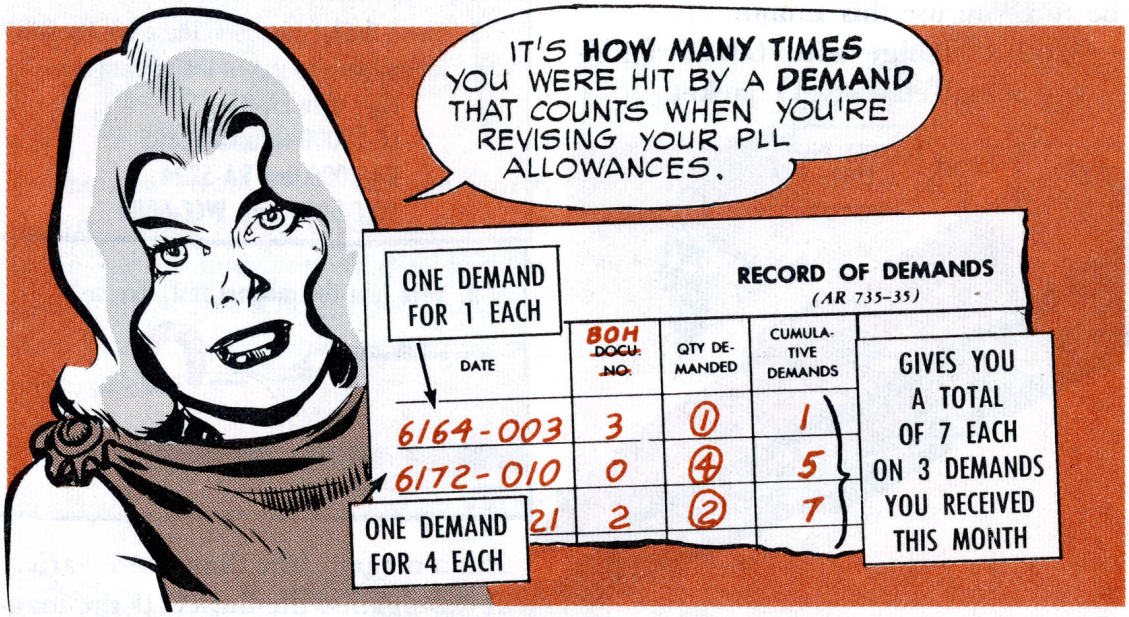
You needn't be if you think of it this way:

A demand is one request.

To put it another way:

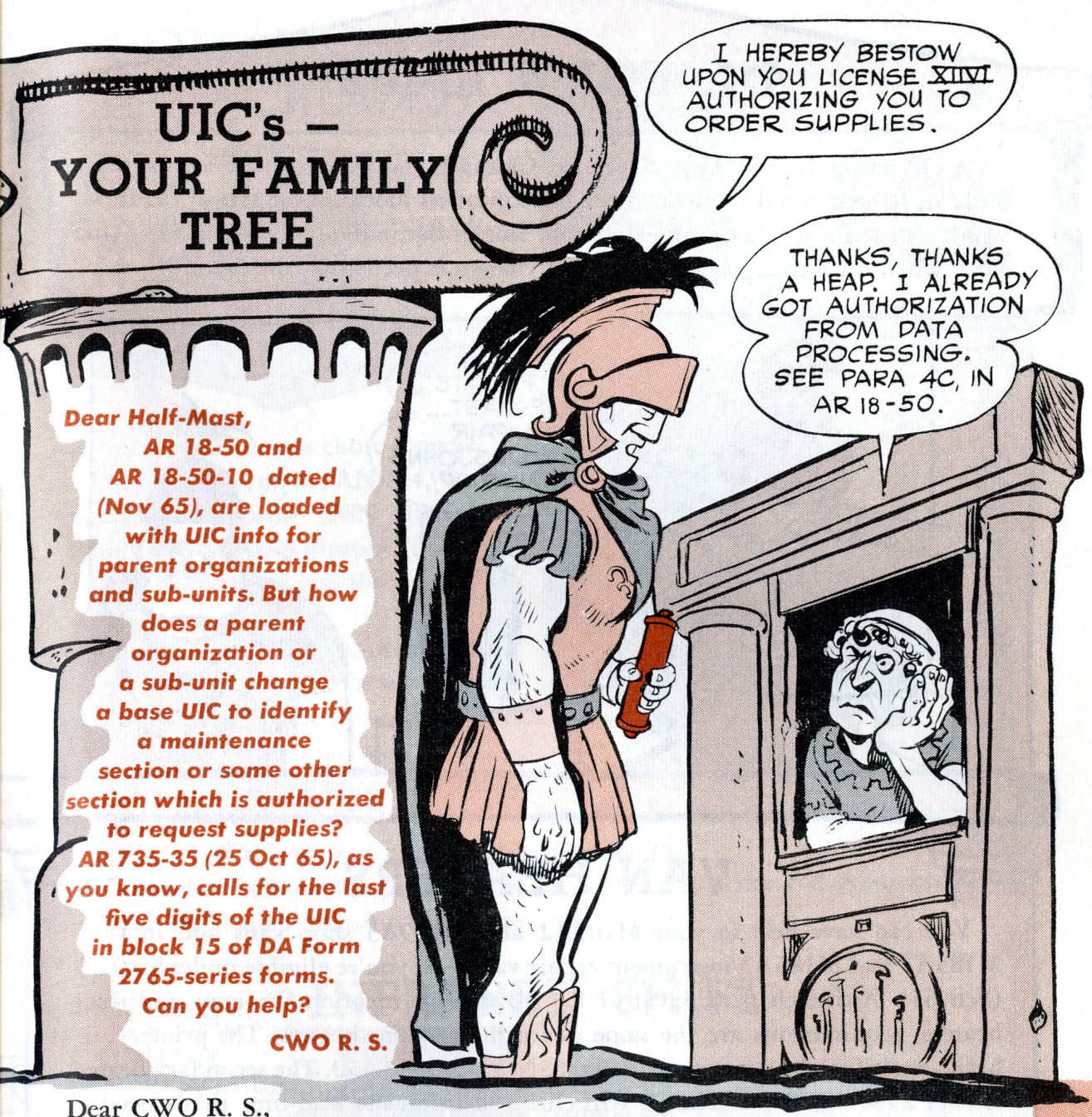
A request places **one demand** on your stocks.

A demand (the request), of course, can ask you for a minimum of one each, or it can ask you for 100 each, or more, of a specific repair part, or maintenance item. But in each case, it's only **one** demand.



So, on items which you're authorized to increase or decrease your stockage, you first count the **separate demands** you recorded on a card. If the card shows 3 or more separate demands within the last six monthly reviews, then you add up the **each** items (cumulative demands) which the separate demands asked for to find what your stockage will be.

Pages 6-1 thru 6-11 of AR 735-35 give you the SOP on maintaining your PLL stocks.



Dear CWO R. S.,

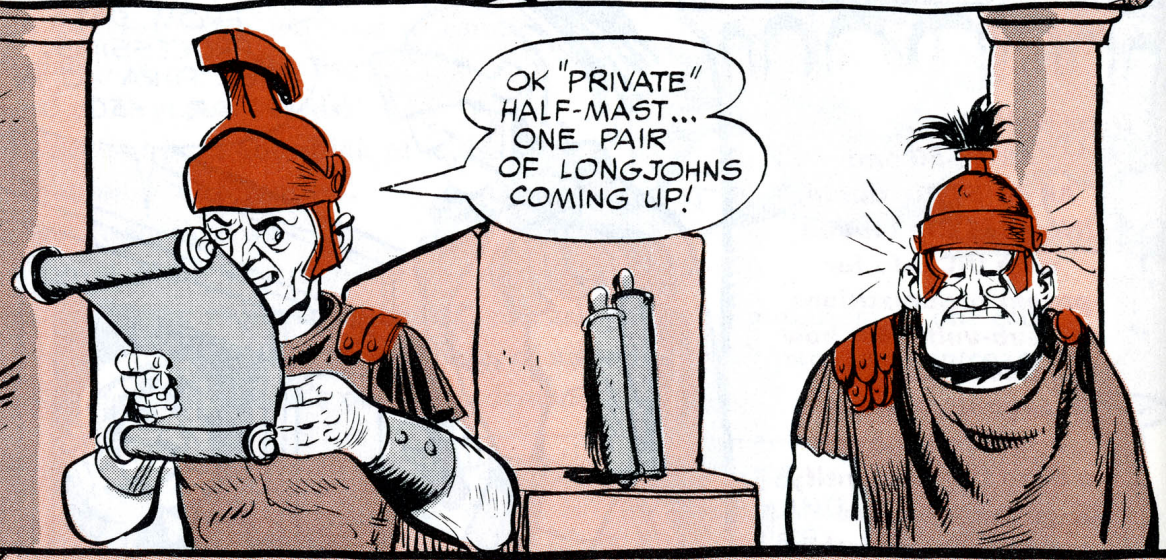
Maintenance sections and other non sub-unit sections are considered split-elements of sub-units. And, they can be identified by codes authorized under Group 4 and Group 5 in AR 18-50.

The right way, tho, to get your sections a legitimate UIC is to ask the data processing activity in your area to assign the codes. Just send in (or take) your base UIC and a list of the sections which need UIC identification, and the data people will set-up the codes for you. That way your outfit's UIC's will be properly registered and recorded at all levels concerned. **See para 4c, in AR 18-50.**

Half-Mast

DA FORM 10-102

A DA Form 10-102, Organizational Clothing and Equipment Records, takes only name and serial number in the identification block on the top of the form. And, all the form takes in the signature line is the individual's signature. That way when rank changes, no sweat. No change is needed on the form.



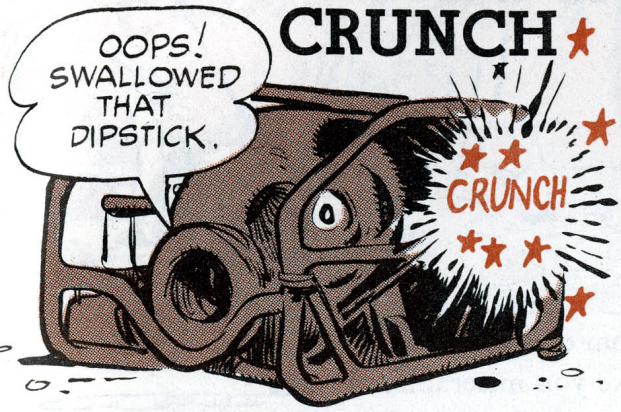
VAN HEATERS

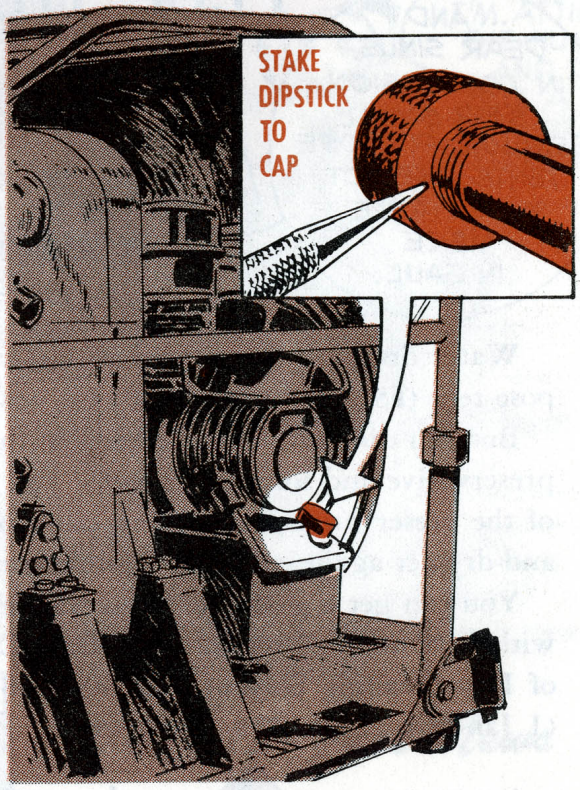
You can have heat in your M109A2 and M109A3 shop vans and in your M185A2 and M185A3 instrument repair vans — if you're eligible under SB 9-16 (Feb 65). Although para 5a(3) of the SB doesn't mention the new multifuel heaters, requirements are the same as for the gasoline heaters. The primary, or basic, multifuel heater comes under FSN 2540-903-0450. The secondary heater is FSN 2540-903-0451. The SB will clue you in on the lead-time that's needed to get the kits, so check it for size before putting in a request.

FOLLOW THE APPENDIX

DA Circular 750-13 (Oct 65) reminds you to send your DA Forms 2407, 2407-1, 2408-3, 2408-7, and 2408-8 to the addresses listed in Appendix II of TM 38-750 instead of to the national maintenance points. The NMP's get the info, so there's no need for duplication.

COMPRESSOR CRUNCH





Best look after this chore soonest.

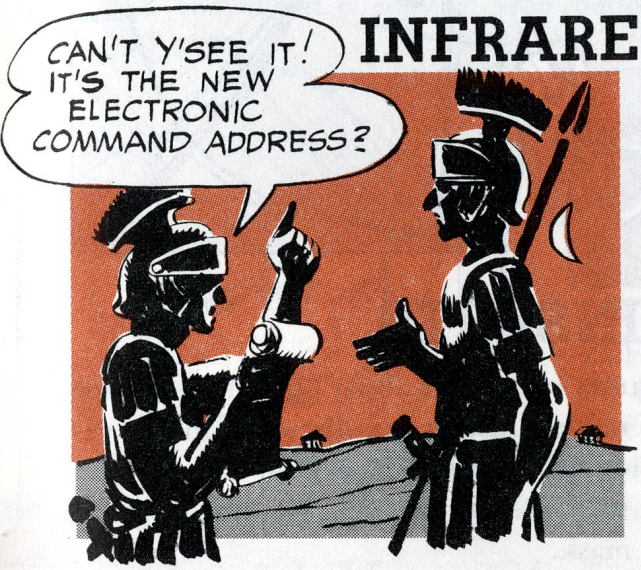
As you know, on the AN-M4, Walter Kidde compressor (FSN 1040-592-8560), the oil sump dipstick (it's called a gage rod) screws into the oil fill-hole cap.

Could be you haven't noticed, though, that normal operating vibration loosens the dipstick from the cap. And, if the dipstick backs-off all the way, natch . . . it'll drop into the compressor's crankcase.

To head off this serious problem the dipstick must be staked to the cap. One careful hit (with a punch and a hammer), where the dipstick screws into the cap, will do the job. First, of course, the dipstick must be screwed all the way into the cap.

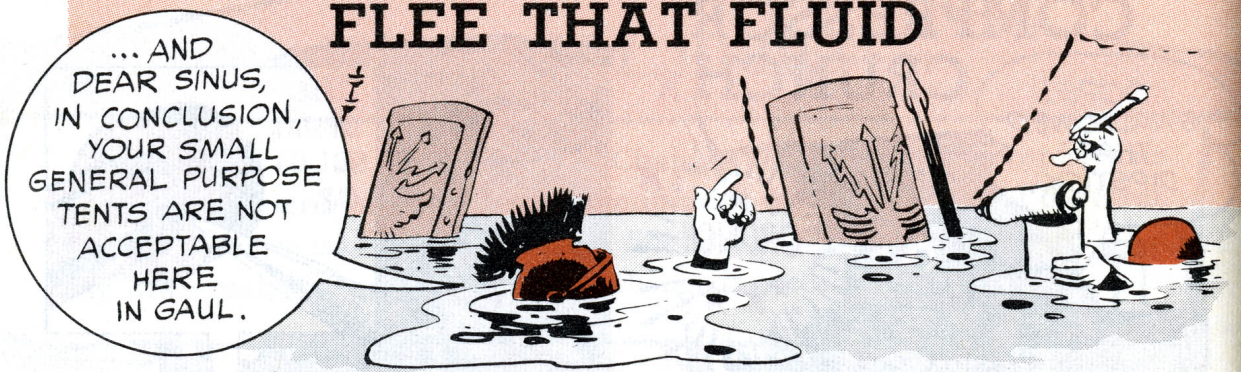
This'll keep the rod from backing off.

INFRARED SHIFT



Hey, there! Infrared night vision equipment responsibility has moved from U. S. Army Mobility Equipment Center to Electronics Command. Yep! The new address for taking care of all the infrareds like weaponsights, tube image intensifiers, searchlight and driving binoculars is: CG, U. S. Army Electronics Command, ATTN: AMSEL-MR-(NMP)-MRC-A, Fort Monmouth, N. J. 07703.

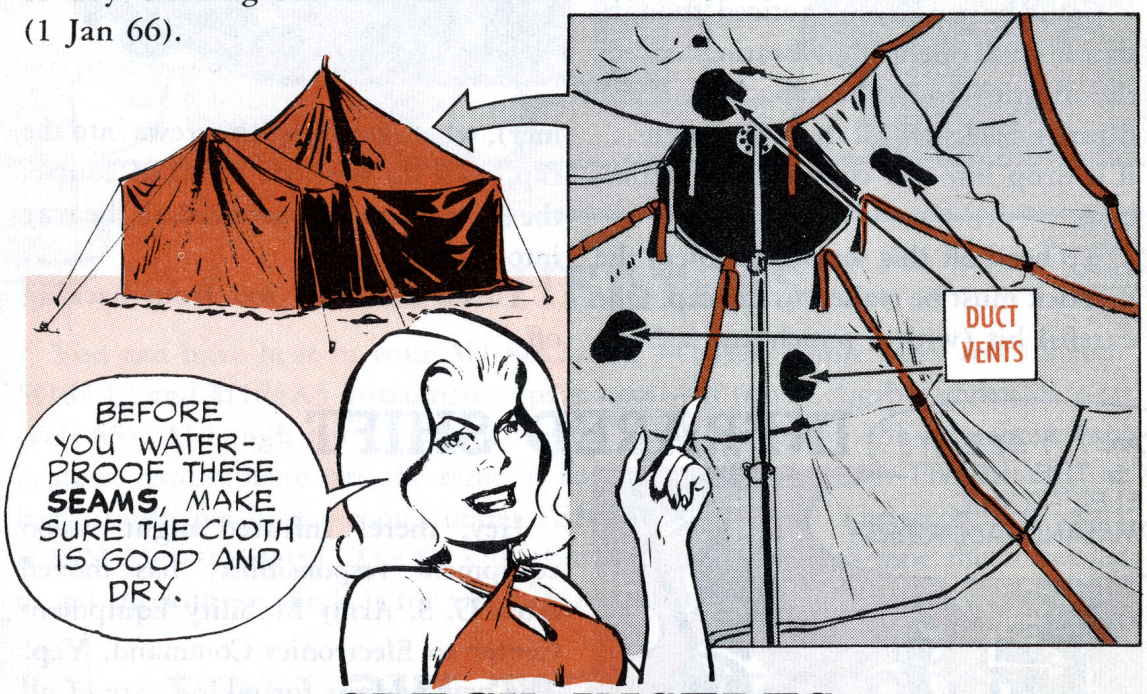
FLEE THAT FLUID



Water dripping down your collar from the seams of your small general purpose tent (FSN 8340-753-6570) can make you miserable.

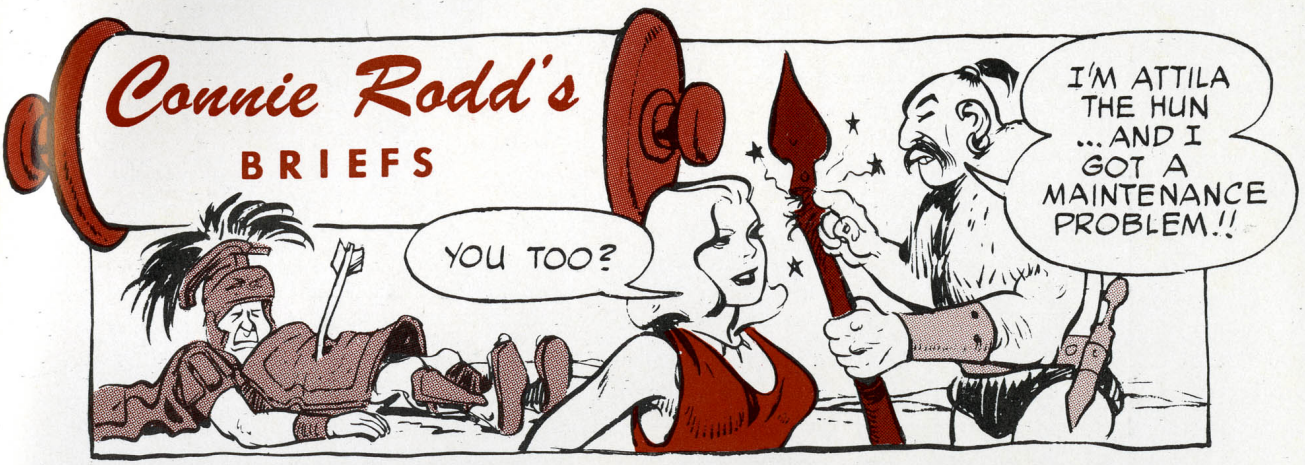
But you can cure water seeping in through the threads with a mix of textile preservative and solvent, provided you can get the tent dry first. Mix equal parts of the preservative and solvent, paint on, let it dry for a full day, do the paint-and-dry act again, and you should be rid of the splash.

You can get a gallon of preservative (Mildew Resistant Compound, textile) with FSN 8030-290-4382 from DoD Cat C8000-IL-A (1 Jan 66), and a gallon of Dry Cleaning Solvent with FSN 6850-281-1985 from DoD Cat C6800-IL (1 Jan 66).



SPECK INSERTS

For awhile longer you spectacle-wearers can forget about optical inserts for the M25A1 and M14-series protective masks. Inserts are discussed in TM 3-4240-255-14 (Sep 65), para 1-13, Section IV, and in TM 3-4240-223-15 (Jun 62), para 13, but they're not in the supply system just yet. For now, optical inserts are available only for the M17 mask.



New Landing Gear

Better check to see if the landing gear on your semi-trailer for your set No 4 electrical repair shop equipment has been modified according to MWO 5-4940-203-35/1. (Sep 61). If not, your support can order kit number 0100-BO6-0607 from U.S. Army Mobility Equipment Center, 4300 Goodfellow Blvd., St. Louis, Mo. 63120 and do the job for you.

Boat Radio Manual

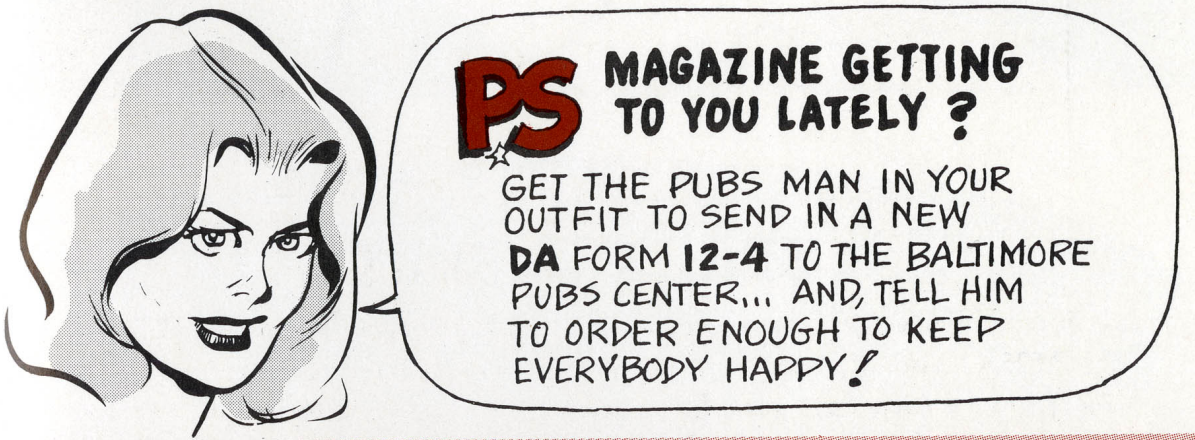
If you need a manual for the AN/SRC-32 radio set in your watercraft, fire a letter off to Commanding General, U.S. Army Electronics Command, ATTN: AMSEL-MR-NMP-CM, Fort Monmouth, N.J. They'll get a copy to your outfit toot sweet.

M577 Generator Cover

Need replacement for the canvas cover on your M577 auxiliary generator? Ask for Cover, Auxiliary Power, FSN 2540-066-4281. You'll find it in Fed Cat C2540-IL-A (Apr 66) with new part number 10932720.

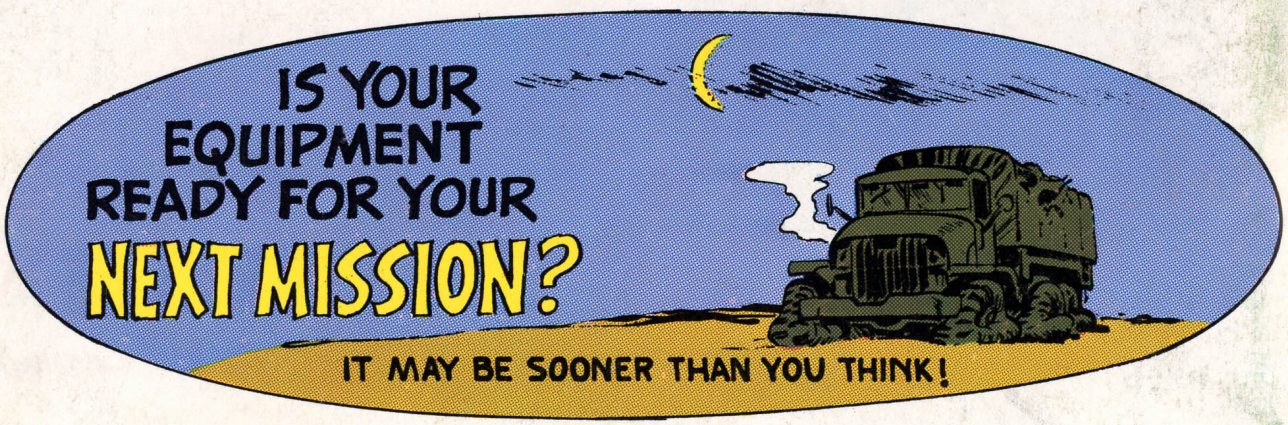
VRC-12 Fuse News

For the health of the PP-2953/U in the receiver-transmitters of your AN/VRC-12 series radio sets, be sure the PP-2953 is wearing a new fuse made just for transistorized power supplies. The new job's a type GBB-10 and goes by FSN 5920-892-9861. It'll go in the next change to the parts list. It replaces the slower-acting type FO3G1OROA and gives proper overload protection.



Would You Stake Your Life right now on the Condition of Your Equipment?

HEY!
HOLD ONE


IS YOUR
EQUIPMENT
READY FOR YOUR
NEXT MISSION?
IT MAY BE SOONER THAN YOU THINK!